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ABSTRACT

Intended for special education personnel, the resource guide is designed to clarify the concept of learning disabilities, determine the nature of the data which must be collected to determine the presence or absence of learning disability, develop procedures for collecting the data, and interpret the data. Initial sections address P.L. 94-142 (the Education for All Handicapped Children Act) procedures for evaluating specific learning disabilities, present eligibility criteria for learning disabilities, the multidisciplinary team, and classroom observation. Assessment of educational functioning is outlined in eight areas: oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, mathematics calculation, mathematics reasoning, and spelling. Criteria for determinaton of severe discrepancy are discussed in a separate section. A final part presents three sample reports from a multidisciplinary team which contain information on the student's intellectual functioning: areas in which there is a discrepancy between achievement and intellectual ability: behavior relevant to educational functioning: medical or physical conditions affecting the educational functioning: and an exclusion statement which states that the severe discrepancy is not due to emotional disturbance, physical handicaps, or socioeconomic or environmental conditions. Appended materials include classroom observation form guides, the KeyMath Diagnostic Arithmetic Test and supplementary norms tables, a resource guide to the stages of individual assessment with suggested instruments and professional resources for Stage Three assessment, a list of steps for determining a significant discrepancy between subtests, resources for statistical methods, percentiles, and a table on relationships among different types of test scores in a normal distribution. (SBH)

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A RESOURCE GUIDE FOR THE DETERMINATION OF LEARNING DISABILITIES

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EC 124140

FOREWORD

The eligibility criteria for the determination of learning disabilities which are stated in the Policies and Administrative Procedures for the Education of Handicapped Students contain some concepts and requirements which may be new or unfamiliar to special education personnel. This resource guide is intended to help special education personnel:

(1) clarify the concept of learning disabilities,

(2) determine the nature of the data which must be collected in order to determine the presence or absence of a learning disability,

(3) develop procedures for collecting the data, and

(4) interpret the data.

This resource guide is not to be construed in any way as replacing or amending the policies and procedures as established.

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Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a non-segregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

(6) nondiscriminatory practices relating to the use of a student's first language; and

(7) evidence of published procedures for hearing complaints and grievances.

In addition to conducting reviews, the Texas Education Agency staff representatives check complaints of discrimination made by a citizen or citizens residing in a school district where it is alleged discriminatory practices have occurred or are occurring.

Where a violation of Title VI of the Civil Rights Act is found, the findings are reported to the Office for Civil Rights, Department of Health, Education and Welfare.

If there is a direct violation of the Court Order in Civil Action No. 5281 that cannot be cleared through negotiation, the sanctions required by the Court Order are applied.

TITLE VII, CIVIL RIGHTS ACT OF 1964; EXECUTIVE ORDERS 11246 AND 11375; TITLE IX, 1973 EDUCATION AMENDMENTS; REHABILITATION ACT OF 1973 AS AMENDED; 1974 WAGE-HOUR LAW AMENDMENTS; AND VIETNAM ERA VETERANS READJUSTMENT ASSISTANCE ACT OF 1972 AS AMENDED

It is the policy of the Texas Education Agency to comply fully with the nondiscrimination provisions of all federal and state laws and regulations by assuring that no person shall be excluded from consideration for recruitment, selection, appointment, training, promotion, retention, or any other personnel action, or be denied any benefits or participation in any programs or activities which it operates on the grounds of race, religion, color, national origin, sex, handicap, age, or veteran status (except where age, sex, or handicap constitute a bona fide occupational qualification necessary to proper and efficient administration). The Texas Education Agency makes positive efforts to employ and advance in employment all protected groups.

TABLE OF CONTENTS

Public Law 94-142 Procedures for Evaluating Specific Learning Disabilities 1

Present Eligibility Criteria for Learning Disabilities 3

The Multidisciplinary Team 5

Classroom Observation 7

Assessment of Educational Functioning 9

  Definitions 10

  Assessment Instruments 20

  Publishers' Addresses 30

Determination of the Severe Discrepancy 31

  Assessed Intellectual Functioning Above the Mentally Retarded Range 32

  Educational Functioning Compared to District Mean 34

  Academic Achievement Compared to Intellectual Functioning 35

  Some General Cautions 41

  Determination of a Severe Discrepancy for Early Childhood Students 42

The Written Report 43

  Sample Case A - Robert 44

  Sample Case B - Fred 51

  Sample Case C - Ernesto 57

APPENDICES

Appendix A 63

Classroom Observation Form Guides 63

Sample 1 63

Sample 2 73

Appendix B 75

KeyMath Diagnostic Arithmetic Test 77

Supplementary Norms Tables 77

Appendix C 81

A Resource Guide to the Stages of Individual Assessment 81

Suggested Instruments 82

Professional Resources for Stage Three Assessment 92

Appendix D 109

Steps in Determining A Significant Discrepancy Between Subtests (Significant Scatter) 109

Appendix E 113

Resources for Statistical Methods 113

Appendix F 117

Percentiles 117

Appendix G 118

Relationships Among Different Types of Test Scores in a Normal Distribution 118

Public Law 94-142 Procedures for Evaluating

Specific Learning Disabilities

The following procedures were published in the Federal Register, Volume 42, Number 250, Thursday, December 29, 1977.

Part 121a of Title 45 of the Code of Federal Regulations is amended as follows:

1. Section 121a.5 is amended by revising paragraph (b)(9) to read as follows:

§ 121a.5 Handicapped Children.

* * * * *

(b) * * *

(9) "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain disfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

* * * * *

§ 121a.702 [Amended]

2. Section 121a.702 is amended by deleting paragraph (a)(2).

3. The following new sections are added:

ADDITIONAL PROCEDURES FOR EVALUATING SPECIFIC LEARNING DISABILITIES

§ 121a.540 Additional team members.

In evaluating a child suspected of having a specific learning disability, in addition to the requirements of § 121a.532, each public agency shall include on the multidisciplinary evaluation team:

(a)(1) The child's regular teacher; or

(2) If the child does not have a regular teacher, a regular classroom teacher qualified to teach a child of his or her age; or

(3) For a child of less than school age, an individual qualified by the State educational agency to teach a child of his or her age; and

(b) At least one person qualified to conduct individual diagnostic examinations of children, such as a school psychologist, speech-language pathologist, or remedial reading teacher.

(20 U.S.C. 1411 note.)

§ 121a.541 Criteria for determining the existence of a specific learning disability.

(a) A team may determine that a child has a specific learning disability if:

(1) The child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed in paragraph (a)(2) of this section, when provided with learning experiences appropriate for the child's age and ability levels; and

(2) The team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of the following areas:

(i) Oral expression;

(ii) Listening comprehension;

(iii) Written expression;

(iv) Basic reading skill;

(v) Reading comprehension;

(vi) Mathematics calculation; or

(vii) Mathematics reasoning.

(b) The team may not identify a child as having a specific learning disability if the severe discrepancy between ability and achievement is primarily the result of:

(1) A visual, hearing, or motor handicap;

(2) Mental retardation;

(3) Emotional disturbance, or

(4) Environmental, cultural or economic disadvantage.

(20 U.S.C. 1411 note.)

§ 121a.542 Observation.

(a) At least one team member other than the child's regular teacher shall observe the child's academic performance in the regular classroom setting.

(b) In the case of a child of less than school age or out of school, a team member shall observe the child in an environment appropriate for a child of that age.

(20 U.S.C. 1411 note.)

§ 121a.543 Written report.

(a) The team shall prepare a written report of the results of the evaluation.

(b) The report must include a statement of:

(1) Whether the child has a specific learning disability;

(2) The basis for making the determination;

(3) The relevant behavior noted during the observation of the child;

(4) The relationship of that behavior to the child's academic functioning;

(5) The educationally relevant medical findings, if any;

(6) Whether there is a severe discrepancy between achievement and ability which is not correctable without special education and related services; and

(7) The determination of the team concerning the effects of environmental, cultural, or economic disadvantage.

(c) Each team member shall certify in writing whether the report reflects his or her conclusion. If it does not reflect his or her conclusion, the team member must submit a separate statement presenting his or her conclusions.

(20 U.S.C. 1411 note.)

Additionally, responses to public comments on the federal guidelines were published. They included:

Theory of the Procedural Approach

Comment. Commenters requested information on the theoretical basis for the approach taken.

Response. Those with specific learning disabilities may demonstrate their handicap through a variety of symptoms such as hyperactivity, distractability, attention problems, concept association problems, etc. The end result of the effects of these symptoms is a severe discrepancy between achievement and ability. If there is no severe discrepancy between how much should have been learned and what has been learned, there would not be a disability in learning. However, other handicapping and sociological conditions may result in a discrepancy between ability and achievement. There are those for whom these conditions are the primary factors affecting achievement. In such cases, the severe discrepancy may be primarily the result of these factors and not of a severe learning problem. For the purpose of these regulations, when a severe discrepancy between ability and achievement exists which cannot be explained by the presence of other known factors that lead to such a discrepancy, the cause is believed to be a specific learning disability.

It was on this basic concept that these regulations were developed.

Certification Requirements

Comment. A few commenters questioned the need for certification by the team as to the existence of specific learning disabilities.

Response. No change has been made. By specifying the procedures to be used in determining the existence of a specific learning disability and because the team has all of the data on which to make an appropriate decision, heavy reliance was placed on the judgment of the evaluation team. Since the team has a great deal of latitude in making the determination of the existence of a specific learning disability, it was apparent that the team should document its decision and should clearly indicate the basis on which the determination was made.

Present Eligibility Criteria for Language and/or Learning Disability*

(H) Learning Disabled Student

(i) A student who is learning disabled is one who has been determined by a multidisciplinary team not to be achieving commensurate with his/her age and ability levels. The lack of achievement is found when the student is provided with learning experiences appropriate for his/her age and ability levels in one or more of the following areas: oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, mathematics calculation, mathematics reasoning, or spelling. The term does not include students whose severe discrepancy between ability and achievement is primarily the result of: a visual, hearing, or orthopedic handicap; mental retardation; emotional disturbance; or environmental, cultural, or economic disadvantage.

Reference
Public Law 94-142 Regulations, Section
121a.540-543

(ii) The admission, review, and dismissal committee or multidisciplinary team may determine that a severe discrepancy exists as long as the membership of the team includes at least:

(I) the student's regular teacher; or

if the student does not have a regular teacher, a regular classroom teacher qualified to teach a student of his/her age; or

for a pre-kindergarten child, an individual certified to teach a child of his/her age; and

(II) a person certified or trained in the area of learning disabilities; and

(III) at least one person certified by the Texas Education Agency to conduct comprehensive assessments of intellectual and educational functioning.

At least one team member other than the child's regular teacher shall observe the child's academic performance in a regular classroom setting. In the case of pre-kindergarten, a team member shall observe the child in an environment appropriate for a child of that age.

(iii) A severe discrepancy between intellectual ability and academic achievement is defined as one where the student's assessed intellectual functioning is above the mentally retarded range, but where the student's assessed educational functioning in areas specified is more than one standard deviation below the mean of the district; or where the student's assessed educational functioning in areas specified is more than one standard deviation below the student's intellectual functioning.

When a student's educational performance is below the mean of the district but consistent with the student's assessed intellectual functioning, the student is not eligible to be classified as learning disabled.

(iv) As verification of the team's decision, a written report of the evaluation will be prepared and will include but not be limited to:

(I) the results of an assessment of intellectual functioning showing that the student is not mentally retarded;

(II) the results of an individual educational assessment describing the area(s) of educational achievement in which the student is deficient and substantiating a severe discrepancy between achievement and intellectual ability and the basis for determining each;

(III) a statement of the relevant behavior noted during the observation and the relationship of that behavior to the child's educational functioning;

(IV) a statement of educationally relevant medical findings, if any, either from the screening prior to referral or from subsequent examination if needed; and

(V) a statement that the severe discrepancy is not primarily the result of an emotional disturbance; visual, hearing, or orthopedic handicap; cultural differences; environmental causes; or economic disadvantage.

Each team member will certify in writing that he/she either concurs or dissents with the results of the evaluation as set forth in the written report. If the report does not reflect an individual's conclusions, the dissenting member may provide a separate statement.

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*Policies and Administrative Procedures for the Education of Handicapped Students, 35.72(6)(H)

The Multidisciplinary Team

THE IMPORTANCE OF THE MULTIDISCIPLINARY TEAM is emphasized in the determination of learning disabilities as it is in criteria for no other handicapping condition. Since a learning disability is not an easy condition to determine, it is important that a group of professionals consider all available data from multiple perspectives in order to ensure that each student is classified appropriately.

THE STUDENT'S REGULAR CLASSROOM TEACHER obviously will have the most to contribute in terms of the student's current academic functioning in the classroom. This person should be able to describe the area or areas in which the student seems to be experiencing the most difficulty, as well as provide a broader picture of the student in all areas.

THE PERSON CERTIFIED OR TRAINED IN THE AREA OF LEARNING DISABILITIES will probably not have had direct experience with the student being considered for placement, but will have had experience with other learning disabled students. This person should be able to compare this student's functioning with that of other learning disabled students to aid in making recommendations about this student's eligibility and need for services.

THE PERSON CERTIFIED TO CONDUCT COMPREHENSIVE ASSESSMENTS will be able to use standardized tests and other assessment techniques to aid in the determination of the severity of the discrepancy between educational functioning and intellectual ability. This person should be able to interpret all assessment data collected about this student, particularly with reference to the ways in which the suspected disability may be reflected in the student's scores on the intelligence and achievement tests.

OTHER MULTIDISCIPLINARY TEAM MEMBERS may include such persons as the speech/language therapist, particularly if there is also a suspected speech handicap, a counselor, particularly if there are related behavior problems; a school nurse or physician particularly if there are related physical or medical problems; and any others who have information to contribute to the decision.

THE MAJOR RESPONSIBILITIES OF THE multidisciplinary team are:

1. to collect or aid in the collection of all data relevant to the determination of eligibility, including data from all five areas of the first stage of the assessment process;
2. to appoint one member of the team (other than the student's regular teacher) to observe the student's performance in the regular classroom;
3. to review all available data, including the observation data;
4. to make a collective group decision about whether or not the student meets the eligibility criteria, based on all data presented;
5. to write a report addressing all areas required in the procedures; and
6. to sign the report (all group members), with individuals providing statements of concurrence or dissent from the decisions.

Classroom Observation

The Policies state that "at least one team member other than the child's regular teacher shall observe the child's academic performance in a regular classroom setting." This team member should be aware of developmental sequence, i.e., what to expect of a "normal" child at differing age levels. Another needed area of knowledge is in the scope and sequence of skills in the academic areas. This is needed to be able to verify whether or not a student is experiencing undue difficulty.

The data gathered during the classroom observation may be the most crucial data collected, both in terms of eligibility determination and in terms of recommendations for programming. Since in many cases valid psychometric data regarding the nature and severity of the discrepancy between educational achievement and intellectual ability may be difficult to obtain, the observation data may be used in conjunction with the other assessment data in order to substantiate professional judgment about the discrepancy. Observation checklists may be used to structure the situation or to provide guidelines needed to assess developmental level and basic skills in the identified area. It is important to remember that reasonable deviations may occur. Some problems are inherent with observational methodology. Observer bias or observer expectation can become a problem if global ratings are used. Therefore, the more the situation is structured, the more bias may be limited. Another problem is the reactivity of the children and the teachers to the presence of an observer. Since the observer will be in the classroom, he/she will need to become as inconspicuous as possible.

The Policies state that "in the case of pre-kindergarten, a team member shall observe the child in an environment appropriate for a child of that age." If the child is attending a day care facility or nursery school, an observation in those settings would seem somewhat more appropriate than in the home. A parent can observe the child and complete a checklist and then a comparison can be made with that of the educator. It might be beneficial to try to determine whether differences arise because the child behaves differently for different adults or because different adults have different conceptions about the child's behavior.

Both state and federal eligibility criteria for learning disabilities stress the importance of excluding all other possible reasons for the child's learning problem. The classroom observation is an excellent source of information about other possible reasons for the student's difficulties. Behaviors to be observed might include:

1. the student's interactions with the teacher (Is there something about the student-teacher relationship which might be interfering with the learning process?)
2. the student's interactions with other students (Are other students interfering with this student's opportunity to learn? Are there signs of possible emotional disturbance evident in peer relationships?)

3. the student's approach to learning tasks (Does the student appear to hear or read/see the instructions accurately? Does the student demonstrate avoidance behaviors to learning tasks? How long is the student's attention span?)

4. the student's learning style (Does the student work best in large groups, small groups, or independently? Does the student receive information best through auditory or visual channels? How much supervision does the student need? Does the student need concrete examples in order to understand abstract concepts?)

If there are obvious problems in the student's learning environment or interpersonal relationships, attempts to alter or remediate those conditions may be necessary. Then, if those changes still fail to affect the student's achievement, and no other causes have become evident, the discrepancy between ability and achievement may be attributed to a learning disability.

The report of the observation should be written in strictly behavioral terms, avoiding judgments, evaluations, or inferences about what the student is feeling or why the student is doing what he/she is doing. It is also important to report the time of day during which the observation was made, the subject matter being taught, the arrangement of the room, and other environment variables which may have contributed to the behavior observed. Whenever possible, observations should be made on more than one occasion and at different times, so that the potential effect of environmental or situational variables may be considered. Appendix A includes two samples of guidelines for conducting and summarizing classroom observations.

Assessment of Educational Functioning

The eligibility criteria for learning disabilities specify that there must be a severe discrepancy between a student's ability level and achievement in one or more of the following areas:

1. oral expression
2. listening comprehension
3. written expression
4. basic reading skill
5. reading comprehension
6. mathematics calculation
7. mathematics reasoning
8. spelling

Definitions

The following statements are samples of some of the more commonly accepted definitions of skills which would be included in each of these areas. These definitions are not intended to be exhaustive or all-inclusive.

1. ORAL EXPRESSION

Salvia, J. and Ysseldyke, J., Assessment in Special and Remedial Education
Boston: Houghton Mifflin, 1978.

Language: A Working Definition

Verbal communication or language is typically defined as consisting of vocabulary, grammar, and phonation. Each of these three components of language can be assessed at three levels: imitation (for example, repeating what is said), comprehension (for example, understanding what is said), and production (for example, spontaneous speech).

Vocabulary

Vocabulary refers to the words understood and produced by a person. Vocabulary is most often considered to be listening and speaking vocabulary, but it can also be reading and writing vocabulary.

Grammar

Grammar refers to the order and interrelationship of words that give meaning to a communication. (For example, the group of words, "mountain the hiked in up they the sunshine," is meaningless even though each word is meaningful).

Phonology

Phonology refers to sounds and their composites (words and sentences) and their relationship to articulation and acoustic reception. The forty-four speech sounds in American English can be combined into a practically infinite number of permutations. School personnel are usually concerned less with the imitation of these sounds than with their comprehension and production, individually and in combination.

The comprehension of individual speech sounds can be either a discrimination or association task. Basically, we want to know if a child can "hear" the difference between sounds (discriminate) and, in written language, can associate letters with sounds.

Wallace, G., and Larsen, S., Educational Assessment of Learning Problems: Testing for Teaching. Boston: Allyn and Bacon, 1978.

In order to develop the competence to understand and use spoken language, the child must first master several basic elements that are prerequisite to this ability. The major components or elements of language usage include: (1) phonology, (2) morphology, (3) syntax, and (4) semantics. It is the combination of these four elements that adds a distinctive structure and meaning to language.

2. LISTENING COMPREHENSION

Carrow-Woolfolk, E., Test for Auditory Comprehension of Language, Boston: Teaching Resources.

The measurement of auditory comprehension as a method of language assessment has historically been limited to testing the understanding of vocabulary. Clinical experience, however, has shown that children and adults with comprehension problems experience difficulty with more complex aspects of language. In the absence of instruments to assist in delineating the areas of language involved, it has been difficult to determine specific problems in language comprehension and thus to provide educational treatment in an orderly and sequential manner. Developmental data on language comprehension have not been available for comparative purposes.

In comprehending the meaning of language, two aspects of utterances are involved: the lexicon (vocabulary) and the structure (grammar and syntax). It is commonly held that understanding of a grammatical pattern precedes the oral expression of it; that is, comprehension occurs prior to production of the same features and some features are comprehended before any features are produced. If this is true, one would further assume that the expression of grammatical patterns systematically and lawfully emerges in the same order as the understanding of them.

Only a limited number of studies have been made of children's comprehension of linguistic structure, either from the point of view of its development or as it relates to expression. Most of the studies of language comprehension have focused primarily on the understanding of vocabulary and not on the comprehension of structure (Ammons and Holmes, 1949; Templin, 1957; Seashore and Eckerson, 1940). A few have been concerned with structure as well as lexicon.

Tiegs, E. W., and Clark, W. W., California Achievement Test, Monterrey, California: McGraw-Hill.

Language auding is the student's ability to comprehend, evaluate, and use what he hears.

3. WRITTEN EXPRESSION

Wallace, G., and Larsen, S., Educational Assessment of Learning Problems: Testing for Teaching. Boston: Allyn and Bacon, 1978.

- One of the highest forms of communication
- In order to become proficient in written expression, a person must develop skills and abilities in all of the other areas that comprise the language arts: competency in speaking, reading, spelling, handwriting, capitalization, punctuation, word usage, and grammar.

Mechanical Aspects of Written Expression

handwriting
capitalization
punctuation
format

Sentence and Paragraph Sense

productivity
syntax
content
organization of thought (combine, categorize, and classify ideas)

Hammill, D. D., and Larsen, S. C., Test of Written Language, Austin, Texas Pro-Ed, 1978.

Many professionals consider writing to be the highest, most desirable, and most complex form of human communication. Writing is viewed as the highest level because it generally develops after a student has mastered reading and spoken language; as the most desirable form because it is the hallmark of all literate persons; and as the most complex form because it is comprised of so many interrelated factors including grammar, capitalization, punctuation, vocabulary, handwriting, and thought.

Components of Written Language

To write meaningfully, one must master at least five basic abilities. These include the ability (1) to form letters, words, numerals, and sentences in a legible manner, (2) to generate enough meaningful sentences to express one's thoughts, feelings, and opinions adequately, (3) to write in compliance with accepted standards of style, especially those governing punctuation, capitalization, and spelling, (4) to use acceptable English snytactic, morphological, and semantic elements, and (5) to express ideas, opinions, and thoughts in a creative and mature way. These five abilities are referred to as the mechanical, productive, conventional, linguistic, and cognitive components of written language.

Diagnosticians, Education Service Center, Region XVII, Lubbock, Texas.

Written expression consists of three components:

1. Motor production
   (Look for: spatial relationships, reversals, inversions, substitutions, omissions)

2. Language mechanics
   (Look at morphology and syntax)

3. Creative expression

4. BASIC READING SKILL

Wallace, G., and Larsen, S., Educational Assessment of Learning Problems: Testing for Teaching. Boston: Allyn and Bacon, 1978.

The purpose of reading is to understand what an author has written, but this cannot be attained unless the person can recognize and analyze the words that comprise reading passages.

Word analysis skills are used to find meanings for unknown words. According to Heilman, word-analysis skills may be grouped into the following five categories:

1. Word form (configuration)
2. Structural analysis
3. Contextual clues
4. Pictorial clues
5. Phonic analysis

Salvia, J. and Ysseldyke, J., Assessment in Special and Remedial Education Boston: Houghton Mifflin, 1978.

Assessment of Word-Attack Skills

Word-attack or word-analysis skills are those used "to derive the meaning and/or pronunciation of a word through phonics, structural analysis, or context clues."

Subtests assessing skill in word analysis range from such basic assessments as analysis of a student's skill in associating letters with sounds to tests of blending and syllabication. Subtests that assess skill in associating letters with sounds are generally of a format in which the examiner reads a word aloud and the child must identify the consonant, vowel, consonant cluster, or digraph that has the same sound as the beginning, middle, or ending letter in the words. Syllabication subtests present polysyllabic words, and the child must either divide the word into syllables or circle specific syllables. Blending subtests, on the other hand, are of three types. First, the examiner may read syllables out loud ("wa - ter - mel - on," for example) and ask the child to pronounce the word. Second, the child may be asked to read word parts and pronounce whole words. Third, the child may be presented with alternative beginning, middle, and ending sounds and asked to produce a word.

Assessment of Word-Recognition Skills

Subtests of diagnostic reading tests that assess a pupil's word-recognition skills are designed to ascertain what many call sight vocabulary. A person learns the correct pronunciation of letters and words through a variety of experiences. The more exposure a person has to specific words and the more familiar those words become, the more readily the person recognizes those words and pronounces them. Well-known words require very little reliance on word-attack skills. Most readers of this book immediately recognize the word hemmorrhage and do not have to employ phonetic skills to pronounce it. On the other hand, words like nephrocystanastomosis are not a part of the sight vocabulary of most of us. The word slows us down, and we have to use phonetics to analyze it.

Word-recognition subtests form a major part of most diagnostic reading tests. Some tests use paper tachistoscopes to expose words for brief periods of time (usually one-half second). Students who recognize many words are siad to have good sight vocabularies or good word-recognition skills. Other subtests assess letter recognition, recognition of words in isolation, and recognition of words in contact.

Assessment of Rate of Reading

Reading rate is generally played down in the diagnostic assessment of reading difficulties. There are, however, some exceptions. Level II of the Stanford Diagnostic Reading Test has a specific subtest to assess rate of reading. On the other hand, tests such as the Gray Oral Reading Test are timed, with time affecting the score a pupil receives. A pupil who reads a passage on the Gray Oral slowly but makes no errors in reading can earn a lower score than a rapid reader who makes one or two errors in reading.

5. READING COMPREHENSION

Wallace, G., and Larsen, S., *Educational Assessment of Learning Problems: Testing for Teaching*. Boston: Allyn and Bacon, 1978.

One model, based on Gray but modified by Robinson, consists of five major aspects:

word perception
comprehension
reaction
assimulation
speed of reading

Many models are based on hierarchical sequence of skills. Duffy and Sherman identify five categories of skills:

word meaning
organization and structure
fact-inference
evaluation
judgment

According to Hirus Karlin, there are three levels of comprehension:

Literal: outline, paraphrase, or summarize the ideas expressed by the author.

Interpretive: cause-and-effect relationships, detecting the main idea, and drawing conclusions.

Critical: includes judging accuracy, distinguishing between fact and opinion, and using analysis skills more thoroughly.

Factors affecting comprehension

nature of the reader (background, interest, physical condition, motivation, etc.)

reader's purpose (adjust comprehension according to various types of material)

type of material (too difficult, complicated language patterns and styles

Salvia, J. and Ysseldyke, J., *Assessment in Special and Remedial Education*
Boston: Houghton Mifflin, 1978.)

Assessment of Comprehensive Skills

Diagnostic reading tests assess three kinds of comprehension skills: literal comprehension, inferential comprehension, and listening comprehension. Assessment of literal comprehension is usually accomplished by asking a number of factual questions based directly on the content of a paragraph or story the student has read. The answers to such questions appear directly in the story or paragraph. Such comprehension tests require specific recall of material read and for that reason are sometimes characterized as memory tests--appropriately, unless, of course, the passage is available for the student to refer to when responding to the questions.

Inferential comprehension tests require interpretation and extension of what has been read. The student must demonstrate an ability to derive meaning from printed paragraphs or stories.

Assessment of listening comprehension is accomplished by reading a story or paragraph to a student and then asking questions based on recall or understanding of the material read. Listening comprehension tests can measure both literal and inferential comprehension.

6. MATHEMATICS CALCULATION

Salvia, J. and Ysseldyke, J., *Assessment in Special and Remedial Education*
Boston: Houghton Mifflin, 1978.

Computational skills include the traditional arithmetic operations of addition, subtraction, multiplication, and division to those that require the student to complete as many as four computational operations in problem-solving tasks. Items designed to assess specific operations generally range from those that require performance of the operation in the form of word problems to those that require the written solution of relatively complex computational problems.

7. MATHEMATICS REASONING

Salvia, J. and Ysseldyke, J., Assessment in Special and Remedial Education
Boston: Houghton Mifflin, 1978.

Arithmetic reasoning subtests require the solution of problems with missing number facts, such as applying mathematical facts and concepts to the solution of problems. Tasks generally include the following kinds of behavior samplings.

Measurement

Items assessing measurement require the recognition and application of common measurement units and the practical application of length, weight, and temperature measures.

Problem Solving

Problem-solving tasks require student to solve "story problems" that are read to them or that they read themselves. Four kinds of problems are generally included: (1) those requiring only a one-step mathematical operation, (2) those requiring more than one computational operation, (3) those requiring that the student differentiate between essential and nonessential information in solving problems, and (4) those requiring that the student demonstrate logical thinking by solving problems with missing elements.

Reading Graphs and Tables

The application of mathematical skills and concepts may be assessed by requiring the student to read graphs and tables in the solution of problems.

Money and Budgeting

The application of mathematical skills and concepts may be assessed by requiring the student to solve money problems. Items include those that assess the extent to which the student can make value judgments about purchasing articles, can interpret budgets, and can comprehend checks and checking accounts.

Time

The application of mathematical facts and concepts to the solution of problems involving time includes test items requiring the student to read clocks and to identify time intervals, holidays, and season.

Tiegs, E. W., and Clark, W. W., California Achievement Test, Monterrey, California: McGraw-Hill.

Mathematics, Concepts, and Problems Subtest

This measures the student's understanding and use of mathematics concepts in a variety of contexts; basic concepts include signs and symbols, various forms of measurement, sequence, money, time geometry, and place values. Ability to relate these fundamental concepts to the ability to perform basic computations.

8. SPELLING

Durrell, Donald D. Durrell Analysis of Reading Difficulty. New York: Harcourt, Brace, and Janovich, Inc. 1955.

The measurement of spelling might be viewed from the basic causes of spelling difficulties. These would include the following:

1. Inability to spell phonetically as evidenced by omission of essential sounds, addition of sounds, or incorrect letters for the sounds of words.
2. Inability to recall correct visual form of the word indicated by correct spelling on phonetic words, but incorrect spelling on non-phonetic words or word elements.
3. Slow handwriting; often the student writes so slowly that he forgets the remainder of the word.
4. Lack of understanding of word meaning; many errors occur on words that are unfamiliar to the student.

Diagnosticians, Education Service Center, Region XVII, Lubbock, Texas

Ability to spell is the ability to associate the sounds of the spoken language with the symbols of the written language.

Factors affecting spelling skills:

Discriminatory skills - the ability to perceive the phonemes within the specific morphemes

Associative skills - the ability to utilize a body of phonetic generalizations to auditorially discriminate a pattern of letters

Processes involved:

- Auditory discrimination
- Auditory blending
- Auditory memory
- Visual memory
- Auditory sequencing
- Fine motor coordination*

*This is involved only if written spelling is included within the spelling definition; this may be a skill in written expression.

Assessment Instruments

The policy requires that assessment of educational functioning in one or more of the eight areas in the eligibility criteria be accomplished through the use of norm-referenced individually-administered instruments. In actuality, it is difficult to locate appropriate norm-referenced instruments in each of the eight areas and many of those that are available are designed for group administration.

If no norm-referenced instruments are available or appropriate, the policies state that the assessment professional should document the rationale for not following the policy and the justification for the use of other techniques.

If only group-administered, norm-referenced measures are available, the assessment professional should provide additional documentation verifying that the score on the group-administered instrument was in fact an accurate reflection of the student's achievement level.

The following list of instruments is only a partial listing of instruments which may be used to measure all or part of the ability areas listed in the eligibility criteria. The list is not intended to reflect official approval of these instruments. It is merely a resource guide.

1. ORAL EXPRESSION

Carrow Elicited Language Inventory (Teaching Resources)	CA 3.0 - 7.11
Language Assessment Battery - English and Spanish (Houghton Mifflin)	GE K - 12
Northwestern Syntax Screening Test (Northwestern University)	CA 3.0 - 8.0
Picture Story Language Test - Myklebust (Western Psychological Services)	CA 7 - 17
Test of Language Development (Pro-Ed)	CA 4.0 - 8.11
Verbal Language Development Scale (American Guidance Service)	CA .1 - 16

2. LISTENING COMPREHENSION

California Achievement Test (McGraw-Hill) Level 10-CATC	GE K - 1
Comprehensive Tests of Basic Skills (CTB/McGraw-Hill Level A	GE K - 1
Durrell Listening-Reading Series (Psychological Corporation)	GE 1 - 9
Gates-MacGinitive Readiness Skills Test (Psychological Corporation)	GE K.8 - 1.2
Iowa Tests of Basic Skills-Primary Battery (Houghton Mifflin)	GE 1.7 - 3.5
Language Assessment Battery-English and Spanish (Houghton Mifflin)	GE K - 12
Stanford Achievement Test (thru Intermediate II level) (Psychological Corporation)	GE 1.5 - 6.9
Stanford Early School Achievement Test (Psychological Corporation)	GE K.1 - 1.8
Test for Auditory Comprehension of Language (Teaching Resources)	CA 3 - 6

3. WRITTEN EXPRESSION

California Achievement Tests (CTB/McGraw Hill)	GE K.5 - 12.9
Comprehensive Tests of Basic Skills (CTB/McGraw Hill)	GE 2 - 12
Language Arts Test (Houghton Mifflin)	GE 7 - 9
Language Assessment Battery - English and Spanish (Houghton Mifflin)	GE K - 12
Iowa Tests of Basic Skills - Primary and Multilevel Batteries (Houghton Mifflin)	GE 1.7 - 8
Stanford Achievement Tests (Psychological Corporation)	GE 1.5 - 9.9
Test of Written Language (Pro-Ed)	CA 7.0 - 14.6
Tests of Achievement and Proficiency (Houghton Mifflin)	GE 9 - 12

4. BASIC READING SKILL

California Achievement Tests (CTB/McGraw Hill)	GE K.5 - 12.9
Comprehensive Tests of Basic Skills (CTB/McGraw Hill)	GE 2 - 12
Durrell Listening-Reading Series (Psychological Corporation)	GE 1 - 9
Gates-MacGinitive Readiness Skills Test (Psychological Corporation)	GE K.8 - 1.2
Gates MacGinitive Reading Tests (Psychological Corporation)	GE 1 - 11
Iowa Tests of Basic Skills-Primary and Multilevel Batteries (Houghton Mifflin)	GE 1.7 - 8
Language Assessment Battery-English and Spanish (Houghton Mifflin)	GE K - 12
Metropolitan Readiness Tests (Psychological Corporation)	GE K - 1
Murphy-Durrell Reading Readiness Analysis (Psychological Corporation)	GE K.8 - 1.5
Nelson Reading Skills Test (Houghton Mifflin)	GE 3 - 9
Stanford Early School Achievement Test (Psychological Corporation)	GE 1.6 - 13
Stanford Early School Achievement Test (Psychological Corporation)	GE K.1 - 1.8
Stanford Test of Academic Skills (Psychological Corporation)	GE 8 - 13

Woodcock-Johnson Psychoeducational Battery (Teaching Resources)	GE preschool-adult
Woodcock Reading Mastery Tests (American Guidance Service)	GE K - 12

5. READING COMPREHENSION

California Achievement Tests (CTB/McGraw Hill)	GE K.5 - 12.9
Comprehensive Tests of Basic Skills (CTB/McGraw Hill)	GE 2 - 12
Iowa Tests of Basic Skills-Primary and Multilevel Batteries (Houghton Mifflin)	GE 1.7 - 8
Language Assessment Battery-English and Spanish (Houghton Mifflin)	GE K - 12
Metropolitan Achievement Tests (Psychological Corporation)	GE K.0 - 12.9
Nelson Reading Skills Test (Houghton Mifflin)	GE 3 - 9
Peabody Individual Achievement Test (American Guidance Service)	GE K - adult
SRA Assessment Survey: ITED (SRA)	GE 1 - 12
Stanford Achievement Tests (Psychological Corporation)	GE 1.5 - 9.9
Stanford Diagnostic Reading Test (Psychological Corporation)	GE 1.6 - 13
Tests of Achievement and Proficiency (Houghton Mifflin)	GE 9 - 12
Woodcock-Johnson Psychoeducational Battery (Teaching Resources)	GE preschool - adult

6. MATHEMATICS CALCULATION

California Achievement Tests (CTB McGraw Hill)	GE K.5 - 12.9
Comprehensive Tests of Basic Skills (CTB McGraw Hill)	GE 2 - 12
Iowa Tests of Basic Skills - Primary and Multilevel Batteries (Houghton Mifflin)	GE 1.7 - 8
Key Math Diagnostic Arithmetic Test (American Guidance Service) (see Appendix A for Key Math Supplementary Norms Tables)	GE preschool - 6
Metropolitan Achievement Tests (Psychological Corporation)	GE K.0 - 12.9
Metropolitan Readiness Tests (Psychological Corporation)	GE K - 1
Peabody Individual Achievement Test (American Guidance Service)	GE K - adult
Stanford Achievement Tests (Psychological Corporation)	GE 1.5 - 9.9
Stanford Diagnostic Mathematics Test (Psychological Corporation)	GE 1.6 - 13
Stanford Test of Academic Skills (Psychological Corporation)	GE 8 - 13
Tests of Achievement and Proficiency (Houghton Mifflin)	GE 9 - 12
The Mathematics Test (Houghton Mifflin)	GE 7 - 9
Woodcock-Johnson Psychoeducational Battery (Teaching Resources)	GE preschool - adult

7. MATHEMATICS REASONING

California Achievement Tests (CTB/McGraw Hill)	GE K.5 - 12.9
Comprehensive Tests of Basic Skills (CTB/McGraw Hill)	GE 2 - 12
Iowa Tests of Basic Skills - Primary and Multilevel Batteries (Houghton Mifflin)	GE 1.7 - 8
Key Math Diagnostic Arithmetic Tests (American Guidance Service) (See Appendix A for Key Math Supplementary Norms Tables)	GE preschool - 6
Metropolitan Achievement Tests (Psychological Corporation)	GE K.0 - 12.9
Metropolitan Readiness Tests (Psychological Corporation)	GE K - 1
SRA Assessment Survey: ITED (SRA)	GE 1 - 12
Stanford Achievement Tests (Psychological Corporation)	GE 1.5 - 9.9
Stanford Diagnostic Mathematics Test (Psychological Corporation)	GE 1.6 - 13
Stanford Early School Achievement Test (Psychological Corporation)	GE K.1 - 1.8
Stanford Test of Academic Skills (Psychological Corporation)	GE 8 - 13
Woodcock-Johnson Psychoeducational Battery (Teaching Resources)	GE preschool - adult

8. SPELLING

Durrell Analysis of Reading Difficulty (Psychological Corporation)	GE 2.0 - 6.0
Larsen-Hammill Test of Written Spelling (Pro-Ed)	GE 1.0 - 8.0
Peabody Individual Achievement Test (American Guidance Service)	GE K - adult
Wide Range Achievement Test (Jasktak Associates)	GE K - adult

Publisher's Addresses

American Guidance Service, Incorporated, Publisher's Building, Circle Pines, Minnesota 55014

CTB/McGraw-Hill, Del Monte Research Park, Monterrey, California 93940

Houghton Mifflin, 6626 Oakbrook Boulevard, Dallas, Texas 75235

Jastak Associates, Inc., 1526 Gilpin Avenue, Wilmington, Delaware 19806

Northwestern University Press, Evanston, Illinois 60201

PRO-ED, 333 Perry Brooks Building, Austin, Texas 78701

Psychological Corporation, 757 Third Avenue, New York, New York 10017

Science Research Associates, Incorporated, 259 East Erie Street, Chicago, Illinois 60611

Teaching Resources Corporation, 100 Boylston Street, Boston, Massachusetts 02116

Determination of the Severe Discrepancy

In order to document the presence of a "severe discrepancy between intellectual ability and academic achievement," the team must demonstrate:

1. that the student's assessed intellectual functioning is above the mentally retarded range

   AND

2. EITHER that the student's assessed educational functioning in areas specified is more than one standard deviation unit below the mean of the district (and not consistent with his or her own intellectual functioning)

   OR

   that the student's assessed educational functioning in areas specified is more than one standard deviation unit below his or her own intellectual functioning.

Assessed Intellectual Functioning Above the Mentally Retarded Range

According to administrative procedures, the assessment of intellectual functioning "must include an assessment of verbal ability and/or performance or nonverbal ability and adaptive behavior" [Section 35.72.030(3)(F)(v)]. The criteria for mental retardation imply that a score less than two standard deviations below the mean in any of those three areas may indicate that the student is not mentally retarded, especially if other data being considered by the team support this conclusion. The instrument used to assess intellectual functioning may be either a verbal instrument or a nonverbal instrument, as long as the examiner is confident that the score is a good indicator of the student's best level of intellectual functioning, and the rationale for this choice is documented in the report. For example, if other data indicate that the student has a serious problem with oral expression, it would be logical to choose a test of intellectual functioning which requires little or no verbal responses from the student. If the data indicate that the student has a serious perceptual motor problem, it would be logical to choose a test of intellectual functioning which is primarily verbal in nature. It is also required that the student's adaptive behavior be assessed in some way, although this may be an informal assessment. (See Appendix C for a list of suggested instruments.)

One traditional method of determining the presence of a learning disability has been to analyze the scatter of subtest scores within a measure of intellectual functioning. However, this procedure presents some severe methodological problems, which are addressed in more detail in Appendix D.

Regardless of the choice of instrument, the multidisciplinary team has a professional responsibility to identify the possible effects of factors other than degree of intelligence which may be influencing the test results. Some of these factors may include the student's English language proficiency, sociocultural differences or deprivation, minimal brain dysfunction, medication, hyperactivity, and physical conditions.

It is also important to remember that the score on any intelligence test should always be considered as a point within a range of scores defined by the standard error of measurement. For example, if a 13 year old student obtains a full-scale score of 71 on the WISC-R, we can say that we have some degree of confidence that the student has an IQ within the range of 68 to 74, since the standard error of measurement for that age on that instrument is approximately 3 points.

In general, in order to assess the student's intellectual functioning with respect to possible classification as learning disabled, the following questions may be appropriate:

1. Should we use a verbal or nonverbal instrument or scale, or should we use a full-scale instrument?

    a. Do we have any indication that the student has specific disabilities in either the verbal or performance areas that might affect his/her test performance?

    b. Which scale(s) will give us the most accurate representation of this student's best general intellectual functioning?

2. Is the student's adaptive behavior consistent with his/her performance on the intelligence test?

3. Are there any known disabilities or conditions which may have affected the test score?

4. Have we considered the possible error in scores inherent in the instrument?

Educational Functioning Compared to District Mean

IF YOUR DISTRICT HAS A DISTRICT-WIDE ACHIEVEMENT TESTING PROGRAM, it should be easy to obtain district means in each of the specific areas measured for each age or grade level of students assessed. If the student you are assessing also took the same test, it will be easy to compare his/her functioning to the mean of the district.

For example, if the district used the Metropolitan Achievement Test, and the district mean of all second graders in the area of mathematics computation is 50, the student being assessed would have to have scored below 40 since the standard deviation for that grade level in mathematics computation was 10. (District Mean minus one standard deviation = 50 - 10 = 40). However, the student's academic achievement must also be inconsistent with his/her assessed intellectual ability. (See procedures for comparing academic achievement to intellectual functioning in the next section).

IN ADDITION, IF THE ACHIEVEMENT TEST USED BY THE SCHOOL DISTRICT WAS GROUP ADMINISTERED, verify that the score on that instrument was a valid estimate of this particular student's functioning by following up with an individually-administered screening-level test of academic achievement. If the scores on the two instruments are consistent in the ability area in question, the score on the group-administered test can be used with confidence. If the scores are _not_ consistent, another achievement test should be individually administered.

For more information about the statistical procedures suggested in this guide, as well as alternate procedures which could be used, Appendix E contains a list of references.

Academic Achievement Compared to Intellectual Functioning

In order to compare academic achievement with intellectual functioning, the scores being compared must be in the same metric with identical means and standard deviations. Although there are many statistical methods for accomplishing this comparison, three options are presented here:

1. Comparison of scores from instruments with already identical means and standard deviations
2. Comparison of scores using z-score formula
3. Comparison of scores using another standard score formula

1. COMPARISON OF SCORES FROM INSTRUMENTS WITH ALREADY IDENTICAL MEANS AND STANDARD DEVIATIONS.

The following format may be used:

Step 1: List scores

Intellectual Functioning:

Name of test(s) ______________________________

mean ________________ s.d. ___________________

Verbal score (if applicable) ☐

Performance score (if applicable) ☐

Full-Scale score (if applicable) ☐

Academic achievement

Name of test: ______________________________

Area assessed: ______________________________

mean ________________ s.d. ___________________

Student's score(s) ☐

Name of test: ______________________________

Area assessed: ______________________________

mean ________________ s.d. ___________________

Student's score(s) ☐

Step 2: Comparison for Discrepancy

Now select scores for comparison (may repeat a number of times)

intellectual functioning (1) ☐

academic achievement in
specific ability area (2) ☐

result (subtract 1-2) (3) ☐

s. d. of tests (4) ☐

Repeat this sequence again, one after the other.

Now, is the result (3) more than the standard deviation (4)? If so, you have evidence to support your professional judgment that there is a severe discrepancy between academic achievement and intellectual functioning in one or more specific ability areas.

2. COMPARISON OF SCORES USING Z-SCORE FORMULA

In order to compare any two scores from instruments with different means and standard deviations, the most common practice is to convert both scores into standard scores and compare their relative distances from the means of their respective instruments. One standard formula for computation of standard scores is the z-score. The formula is:

$$z = \frac{X - M}{S}$$

The standard score (z) is equal to the obtained score (X) minus the mean of the instrument (M) divided by the standard deviation of the instrument (S). For example, if a student's IQ is 85 on a test for which 100 is the mean and 15 is the standard deviation, his standard score for intellectual functioning would be calculated as follows:

$$z = \frac{85 - 100}{15} = -1.0$$

Therefore, the student scored 1 standard deviation below the mean on the IQ test.

If the same student scored 35 on an achievement test for which 50 is the mean and 5 is the standard deviation, his standard score for achievement would be calculated as follows:

$$z = \frac{35 - 50}{5} = -3.0$$

Therefore, the student scored 3 standard deviations below the mean on the achievement test.

To compare the student's functioning in the two areas, simply subtract the scores:

$$(-1.0) - (-3.0) = 2.0$$

Therefore, this student is functioning two standard deviation units below his own intellectual functioning which is more than one standard deviation below his own intellectual functioning, and he meets this criterion.

The following format may be used:

$$\frac{\underset{\text{IQ score}}{\boxed{}} - \underset{\substack{\text{Mean of}\\ \text{IQ test}}}{\boxed{}}}{\underset{\substack{\text{Standard deviation}\\ \text{of IQ test}}}{\boxed{}}} = \underset{\text{IQ standard score}}{\boxed{}}$$

$$\frac{\underset{\substack{\text{Achievement}\\ \text{score}}}{\boxed{}} - \underset{\substack{\text{Mean of achieve-}\\ \text{ment test}}}{\boxed{}}}{\underset{\substack{\text{standard deviation}\\ \text{of achievement test}}}{\boxed{}}} = \underset{\substack{\text{Achievement}\\ \text{standard score}}}{\boxed{}}$$

$$\underset{\substack{\text{IQ standard}\\ \text{score}}}{\boxed{}} - \underset{\substack{\text{Achievement}\\ \text{standard score}}}{\boxed{}} = \underset{\text{discrepancy}}{\boxed{}}$$

If the discrepancy is greater than one, the student meets this criterion.

3. COMPARISON OF SCORES USING ANOTHER STANDARD SCORE FORMULA

In order to convert the achievement score to a standard score with the same mean and standard deviation as the IQ, use the following formula:

$$x = \left(\frac{S_{IQ}}{S_{ach}}\right) X_{ach} - \left[\left(\frac{S_{IQ}}{S_{ach}}\right) M_{ach} - M_{IQ}\right]$$

The achievement standard score is equal to the quotient of the standard deviation of the IQ test divided by the standard deviation of the achievement test times the obtained score on the achievement test minus the difference of the quotient of the standard deviation of the IQ test divided by the standard deviation of the achievement test times the mean of the achievement test minus the mean of the IQ test.

For example, if the student has been tested on the WISC-R, the mean of IQ test (M_{IQ}) is 100 and the standard deviation of the IQ test (S_{IQ}) is 15. If the student scored 22 on the Metropolitan Achievement Test in math computation (X_{ach}), where the mean for that grade level in math computation (M_{ach}) is 50 and the standard deviation (S_{ach}) is 10, then the standard score (x) is computed as follows:

$$x = \left(\frac{\overset{15}{(S_{IQ})}}{\overset{10}{(S_{ach})}}\right) \overset{22}{(X_{ach})} - \left[\left(\frac{\overset{15}{(S_{IQ})}}{\overset{10}{(S_{ach})}}\right) \overset{50}{(M_{ach})} - \overset{100}{(M_{IQ})}\right] = \left(\frac{15}{10}\right) 22 - \left(\frac{15}{10}\right) 50 - 100$$

$x = 58$

The student's standard score in math computation is 58 with the same mean (100) and standard deviation (15), as the WISC-R. Now the student's score on the Metropolitan Achievement Test can be directly compared to his score on the WISC-R by the method described earlier. For example:

intellectual functioning	(1)	80
academic achievement in specific ability area	(2)	58
result (subtract 1-2)	(3)	22
s.d. of tests	(4)	15

(3) is more than (4). Therefore the student has a severe discrepancy between academic achievement and intellectual ability.

Some General Cautions

In most cases, it will be possible to establish the severe discrepancy psychometrically through the use of standardized tests. However, the multidisciplinary team, considering not only the psychometric data, but also all other available data, makes the final decision.

In some cases there are few satisfactory standardized instruments available. If the person responsible for assessment documents the lack of appropriate instruments and describes the rationale for collection of other data in the areas in question, the multidisciplinary team may make a professional judgment about the degree of discrepancy between achievement and intellectual ability.

Some examiner's manuals do not report means and standard deviations for the instruments being used, and it may be necessary to obtain the technical manual or contact the publisher for that information. An additional appendix is being prepared which is a list of some of the more common instruments with means and standard deviations given. If necessary, the mean and standard deviation may be calculated for a district if a statistically appropriate sample of students in the same district can be assessed.

An additional caution is noted in the use of grade equivalent or percentile scores. Such scores are useful in interpreting the meaning of test scores to teachers and parents, but further statistical use of grade equivalent or percentiles is generally inappropriate since they violate the assumption of equal increments of numbers corresponding to equal increments of psychological quantity. (See Appendix F) When using the formulae suggested in this section, use raw scores, scaled scores, or standard scores, rather than grade equivalents or percentiles. (See Appendix G)

Determination of a Severe Discrepancy for Early Childhood Students

Since most preschool aged children have not had instruction in reading and mathematics, achievement instruments in those areas will not reveal much data pertinent to the determination of learning disabilities. The remaining two areas, oral expression and listening comprehension, will be the most frequent disability areas for learning disabled children in this age group. There are three major issues in the determination of a severe discrepancy between intellectual functioning and achievement in these two areas.

The first issue is that many measures of intellectual functioning, particularly for children in this age range, are highly dependent on the child's oral expression and listening comprehension. If the child's functioning in either of these two areas is impaired, the child's ability to respond to items on the test is very likely impaired also. Developmental scales or measures of intellectual functioning which are more heavily weighted in nonverbal areas may provide more accurate measures of the child's ability.

The second issue is that appropriate, standardized achievement tests in these two areas are virtually nonexistant for this age-group. In the absence of appropriate instruments, speech and language professionals may offer the most thorough assessments in these areas, whether or not those assessments are standardized. Early childhood teachers are also usually able to assess children's language, either through informal assessment instruments or through diagnostic teaching.

The third issue is that since either the measure of intellectual functioning or the achievement measure or both may not result in standard scores, psychometric determination of the severe discrepancy may not be possible. In this case the professionals involved in the assessments done, relying heavily on their knowledge of child development, should make a professional judgment about the degree to which the child's observed functioning in one or more of the designated areas is severely discrepant from the expectations one would have for a child of that age and ability level. The documentation of assessments done in both intellectual functioning and achievement areas should be as specific as possible, and the observation of the child should support the assessment data. The statement about the severe discrepancy should include the team's reasoning and justification for making the statement.

The Written Report

Five sections required in the report from the multidisciplinary team are identified in the administrative procedures. It is important to emphasize that all statements in this report should reflect the judgments of the majority of the team.

Section (a) is a statement of the student's intellectual functioning. Guidelines for this determination are in the preceding section of this document.

Section (b) is a description of the specific area or areas in which there is a severe discrepancy between the student's achievement and intellectual ability. This section should also state the basis for the committee's judgment about each discrepancy.

Section (c) is a statement of the specific behavior noted during observation of the student which is relevant to the student's educational functioning. There should also be a statement of the relationship of that behavior to the educational functioning.

Section (d) is a statement of any medical or physical conditions discovered by the referral committee or during the assessment process which may be affecting the student's educational functioning. If no abnormal conditions were noted, a simple statement should suffice. The committee may choose to recommend further assessment of physical factors if there is any indication that those factors may be affecting educational functioning.

Section (e) is an exclusion statement. The committee must state its judgment that the severe discrepancy between achievement and ability is not primarily the result of any of three kinds of other conditions: emotional disturbance, physical handicaps, or socioeconomic or environmental conditions. In order to make this statement, the team must review all available data, including that gathered during the referral process and all three stages of the assessment process. It is important to note that the other condition may be present simultaneously with the learning disability, but the committee's responsibility is to determine that learning disability is not primarily resulting from the other conditions.

The report must be signed by all members of the multidisciplinary team. Any individual member of the team may indicate concurrence or dissent with any part of the report.

Sample Case A

Name: Robert

Age: 10.11

Grade: 4th

Stage I Assessment

Language:

According to Robert's parents, they have never spoken any language other than English in the home. In an interview with Robert conducted prior to the testing session, he was able to respond to questions about his interests with detailed descriptions of his pets, and no difficulties were noted in his ability to understand or use English.

Physical:

The health history inventory and vision and hearing screening submitted through the referral committee contained no indicators of abnormal physical conditions.

Emotional/Behavioral:

Robert's teacher and his parents agree that he appears tense, nervous, and easily frustrated. During a classroom observation (See attached), Robert's behavior appeared to be significantly different from his peers but responsive to conditions in the classroom. There were no indicators of emotional disturbance.

Sociological:

Robert is the younger of two children in a "middle class" Anglo family. The father owned a book store which he recently sold. He now works at various retail jobs. The mother does not work outside the home. Robert's parents report that he is able to perform regular chores around the house without supervision, and he is allowed to ride his bike freely in the immediate neighborhood. His friends tend to be boys a year or two younger than himself. Robert's parents want him to be able to go to college and enter a profession eventually; therefore, they are very strict about his doing his homework, and he loses certain privileges for every grade below a B.

Intellectual:

On the Wechsler Intelligence Scale for Children-Revised, Robert appears to be functioning within the normal range of intelligence. We are reasonably confident that his verbal IQ falls between 81 and 89, his performance IQ between 87 and 99, and his full-scale IQ between 84 and 90. Based on information presented under the emotional/behavior and sociological areas above, Robert's adaptive behavior also appears to be appropriate

Stage II Assessment

WRAT:	G.E.	%ile	St. Score
Spelling	2.3	1	67
Arithmetic	3.2	14	84
Gilmore Oral Reading Test:			
Accuracy	2.8		
Comprehension	6.7		
PIAT:			
Math	3.5	34	94
Woodcock Reading:			
Letter Identification	3.2		42
Word Identification	1.8		29
Word Attack	2.0		39
Word Comprehension	2.5		40
Passage Comprehension	2.5		39
Total Reading	2.3		34

Since Robert's educational background, cultural environment, and economic status are very similar to that of the norm samples on which these instruments were developed, it is not suspected that those factors influenced the results of this assessment.

Stage III Assessment

Learning Competencies

Brigance: Reading

- Word Recognition - 3rd grade
  Knew - 235/250 basic sight words
  9 direction words
  16/57 abbreviations
  only five contractions
  22/40 common signs
- Reading Comprehension - 3rd grade
  Knew consonant sounds - initial and final, no vowel sounds
  Had trouble with blends, knows approximately 1/2 of those, presented at his grade level

- Context Clues - 4th grade
  7/12 sentences read
  Difficulty with vowels and consonant blends
- Classification - 4th grade
  13/24 correct responses
  Does not have the concept of "seasons"
- Analogies - 3rd grade
  10/24 sentences completed
  "Fruit" might not be understood
- Antonyms - 1st grade
  1/28 acceptable responses
  Robert had difficulty with the concept of "opposite"

Brigance: Math 4.2 grade level

Robert can write four place members
can count by 2's, 5's, and 3's
knows multiplication combinations fairly well; needs reinforcement
successful with subtraction only when regrouping is not necessary
needs to learn three digit addition with renaming

Observation Data

Day of week: Tuesday

Person making observation: Jan Smith, LD Teacher

Time span: 10:00 a.m. to 11:00 a.m.

Class activities/subjects: whole group finishing math worksheets during first 15 minutes; small-group language arts activities during next 45 minutes, with teacher moving from group to group (5 groups of 5 kids)

Pupil/teacher ratio: 25 to 1 (no aide)

Classroom arrangement: individual desks arranged in small clusters; "activity centers" at counters on two sides of the room

Student-teacher interaction:

During math time, Robert continually asked (verbally and by raising his hand) for assistance from teacher; teacher moved to his desk only when he raised his voice indicating extreme frustration (she worked with other students or ignored him the rest of the time); teacher's response was to give him the answer - no additional explanation

During language arts, teacher either ignored Robert's fidgeting, or gave negative verbal attention (sit down; pay attention; get back in your seat; you are not working; etc.) All instructions were given verbally to each small group.

Student peer interaction:

During math time, most students ignored Robert, as they seemed to understand and be doing the worksheets. Robert moved his desk slightly away from others into a corner.

During language arts time, other students in Robert's group appeared to echo teacher's negative verbal responses to Robert's behavior (Hurry up; You are slowing us down; Gee, what a dummy; Don't you even know that word?; etc.)

Approach to task:

During math activity, Robert would work briefly and then throw down his pencil and raise his hand and start to ask for help. After teacher responded, he would again work very briefly before stopping to ask for help. He appeared to work on only 3 problems during 9-15 minute period, when other students appeared to do 10 to 15.

At the beginning of language arts, Robert was last student to get his materials and find his place in his group. He slouched way down in his seat, turned slightly away from his desk. He frequently stared out the window, and the expression on his face appeared to be a scowl.

Learning style:

The math activity was essentially an independent one, and Robert did not seem to be able to work that way.

The language arts activity was a small group activity requiring interaction of group members. They were to take turns reading a sentence and identifying the grammatical errors. Robert attempted to read his sentences, but appeared to do so with great reluctance and with little understanding of the point of the task

General:

Robert's math and reading skills appear to be much lower than the general level of his class. The rest of the class appears to be average or above average.

Worksheet for Conversion to Standard Scores

Scores used: IQ WISC-R (FS) = 87

Achievement Woodcock (Tot. Rdg) = 34

First method:

$$x = \left(\frac{S_{IQ}}{S_{ach}}\right) X_{ach} - \left[\left(\frac{S_{IQ}}{S_{ach}}\right) M_{ach} - M_{IQ}\right]$$

$$= \left(\frac{15}{10}\right) 34 - \left[\left(\frac{15}{10}\right) 50 - 100\right]$$

$$= 1.5 \times 34 - [(1.5 \times 50) - 100]$$

$$= 51 - [75 - 100] = 51 - [-25] = 76$$

87 - 76 = 11 → not more than 1 S.D.

Second Method: $z = \frac{X - M}{S}$

$$z_{IQ} = \frac{87-100}{15} = -.87 \qquad z_{ach} = \frac{34-50}{10} = -1.6$$

$$\begin{array}{r} 1.60 \\ -\ .87 \\ \hline .73 \end{array}$$

→ not more than 1 S D

Written Report of Eligibility for Learning Disabilities

a. Robert's intellectual functioning is above the mentally retarded range as evidenced by his full-scale IQ (WISC-R) of 87.

b. There is not a severe discrepancy between Robert's math calculation (WRAT and PIAT) and his intellectual functioning (WISC-R). If basic reading skill is measured by the total reading score on the Woodcock Reading Test and compared to the total IQ score, there is no severe discrepancy between achievement in basic reading skill and intellectual ability. If reading comprehension is measured by either word comprehension or passage comprehension on the Woodcock Reading Test and compared to the total IQ score, there is no severe discrepancy between achievement in reading comprehension and intellectual ability.

c. According to the observation data, Robert appears to be easily frustrated and have a short attention span, but that may be partly due to a possible conflict with his teacher as well as to the observation that the skills of the rest of the class appear to be higher than his.

d. No relevant medical factors were noted.

e. Robert's learning problems do not appear to be primarily the result of emotional disturbance; visual, hearing, or orthopedic handicaps or economic, environmental, or cultural differences.

It is the opinion of this committee that Robert does not meet the eligibility criteria for learning disabilities.

	Concur	Dissent
Mrs. J. Klein (regular teacher)	✓	
Jan Smith (LD teacher)	✓	
L. Flanagan (assessment)	✓	

Sample Case B

Name: Fred

Age: 14.0

Grade: 8.9

Stage I Assessment

Language:

According to Fred's parents, English is the only language which has been spoken in the home. In an initial interview between Fred and this examiner, he appeared to understand and use English appropriately.

Physical:

Health History - presently reported as good; Visual and Hearing Screening - normal. Neurological clinic reports a boy with possible learning problems. Testing completed in M.D.'s office corresponded with the school psychological evaluation; "I is my impression that the patient does have a learning problem probably of a heredity basis." No medication was prescribed.

Emotional/Behavioral:

Based on the classroom observation (attached), teacher's reports, and Fred's performance during testing, he does not appear to have any problems in this area.

Sociological:

Fred's family has moved frequently due to the father's occupation as a land developer. Fred is an only child and during his father's frequent absences his mother reports that he takes on the role of "head of the house" and works extra hard to please her. He is active in church youth group activities and the Boy Scouts.

Intellectual:

Fred's performance on the Wechsler Intelligence Scale for Children-Revised was above the normal range of intelligence. We are reasonably confident that his verbal IQ is between 119 and 125, his performance IQ between 118 and 128, and his full scale IQ between 122 and 128. Based on information presented in the emotional/behavioral and sociological areas, Fred's adaptive behavior also appears to be appropriate for his age and culture.

Stage II Assessment

WRAT (Level II):	G.E.	%ile	St. Score
Reading	8.1	53	101
Spelling	4.0	2	68
Arithmetic	5.7	14	84
PIAT:			
Math	10.3	60	104
Reading Recognition	9.4	56	102
Reading Comprehension	10.0	59	103
Spelling	3.5	3	72
General Information	11.8	80	113
Total	8.7	48	99

Note: Total testing time for above 2 tests was about 4 hours. His overall rate is extremely slow; he can read and understand anything he needs to read given sufficient time. He needs 3-4 times as long.

Metropolitan Achievement Tests

	Raw Score	St. Score
Word Knowledge	34	52
Reading	34	56
Spelling	19	36
Language	51	49
Language Study Skills	24	65

Gray-Votaw-Rogers
General Achievement Test

	Subtest Score	%ile	St. Score
Elementary Science	70	30	4
Language	56	5	2
Literature	58	15	3
Spelling	50	2	1
Reading: Vocabulary	66	30	4
Reading: Comprehension	66	20	4
Social Studies	61	15	3
Health & Safety	71	30	4
Arithmetic Reasoning	66	15	3
Arithmetic Computation	66	20	4
Total	630		

Total Average 63.0
Educational Grade 6.7
Educational Age 11.9

Since Fred's educational background, cultural environment, and economic status appear to be very similar to the normative samples on which these instruments were developed, those factors do not appear to have influenced the results of these assessments.

Stage III Assessment

Learning Competencies

Fred knows consonant sounds in isolation, sometimes reverses letters, but self corrects; correctly pronounced 22/32 common syllables in isolation; had difficulty in blending these.

Auditory memory is good; Fred says he keeps sounding the word out in his head until he makes a word that he has heard; relies heavily on contextual clues; can answer "wh" questions (reading comprehension).

Observation Data

Day of week: Wednesday

Person making observation: Linda Logan, Resource teacher

Time span: 9:45 a.m. - 10:45 a.m.

Class activities/subjects: 2nd period class, General Science

Pupil/teacher ratio: 27 to 1

Classroom arrangement: desks were in rows; along 2 walls were areas for experiments.

Student-teacher interaction:
Fred appeared to attend well to teacher's instructions. He asked for clarification by raising his hand at one point. Class assignments were given by the teacher; two groups of four were to go to separate learning centers for experiments, while the rest of the class were to read in their textbooks.
NOTE: The teacher reported that she does allow Fred more time to complete assignments and in lieu of written assignments, sometimes Fred tapes his response.

Student-peer interaction:
Members of Fred's group seemed to accept him readily. He participated in the activities, but relied on others to read the step-by-step instructions.

Approach to task:
During the small group activity, Fred relied on others to read for him; he seemed eager to carry out the assignment, i.e. "Great, we get to experiment today." He appeared to be task-oriented. Another group member wrote the group responses.

Learning style:
The group activity facilitated Fred's participation. Others read and wrote for him, although he could activily participate in carrying out the steps of the experiment.

General:
Socially, Fred seems to be accepted by class members. He appeared to be somewhat introverted although he came into the class with two other boys and continue to "rough house" for a few minutes before the bell rang for class to begin.

Worksheet for Conversion to Standard Scores

Scores used: IQ WISC-R (FS) = 125

Achievement Gray-Votaw-Rogers = 66
Reading Comp.

First method:

$$x = \left(\frac{S_{IQ}}{S_{ach}}\right) X_{ach} - \left[\left(\frac{S_{IQ}}{S_{ach}}\right) M_{ach} - M_{IQ}\right]$$

$$= \left(\frac{15}{9.8}\right) 66 - \left[\left(\frac{15}{9.8}\right) 77.9 - 100\right]$$

$$= (1.53)\, 66 - [(1.53)\, 77.9 - 100]$$

$$= 100.98 - [119.18 - 100] = 100.98 - 19.18 = 81.8$$

$$125 - 81.8 = 43.2$$

If SD is 15, 43.2 is more than 1 S.D.

Second Method: $z = \frac{X - M}{S}$

$$Z_{IQ} = \frac{125 - 100}{15} = 1.67 \qquad Z_{ach} = \frac{66 - 77.9}{9.8} = -1.21$$

$1.67 - (-1.21) = 2.88$ → more than 1. S.D.

Written Report of Eligibility for

Learning Disabilities

a. Fred's intellectual functioning is above average as evidenced by his full scale IQ (WISC-R) of 125.

b. There is a severe discrepancy between Fred's academic functioning in Reading and Arithmetic on timed tests (Gray-Votaw-Rogers Achievement Test) and his intellectual functioning (WISC-R).

c. Observation data indicate that Fred can complete assignments when the assignment is adapted. When reading or writing skills are involved, his rate is extremely slow.

d. Health history noted high fevers as a child. Last school year Fred was out of school for 7 weeks with mononucleosis. The Neurological Clinic reported that Fred had possible learning problems. Testing completed in the doctor's office corresponded with the school's psychological evaluation. "It is my impression that the patient does have a learning problem probably of a heredity basis." No medication was prescribed.

e. Fred's difficulties in learning do not appear to be primarily the result of emotional disturbance; a visual, hearing, or orthopedic handicap; or economic, environmental, or cultural differences.

It is the opinion of this committee that Fred does meet the eligibility criteria for learning difficulties.

	Concur	Dissent
Sue Jones (regular teacher)	✓	
Linda Logan (LD teacher)	✓	
B. Jacobs (assessment)	✓	

Sample Case C

SOUTH PLAINS EDUCATIONAL CO-OP
Individual Assessment Report

Name: Ernesto Gonzales
Sex/Ethnic: Male/Hispanic
DOB: 8-15-66
CA: 13-1
School: Junior High
Grade: 8

Date of Testing: 9-26-79
9-27-79
Assessment Team: S. McSpadden
R. Sebold
V. Miles
J. Teeters
Date of Report: 10-1-79

I. Language Factors

Ernesto is bilingual as he is able to speak both English and Spanish. His mother reports that both languages are spoken in the home and that Ernesto prefers to speak English. His teachers also report English to be the dominant language. Informal observation indicates that skills in both receptive and expressive language are depressed. He frequently asked for questions to be repeated and has difficulty attending to task. Performance on the Digit Span subtest (WISC-R) yields a scaled sore of 1 which further indicates that his auditory processing skills and receptive language skills are depressed. When communicating orally, sentence patterns are average as he generally follows a subject with a verb; however, verb usage, plurals, and prepositional usage are substandard. Esaminer observation indicates that Ernesto could not reproduce the /sw/blend. The mother reports that the language dysfunction is also present in Spanish. She further reported that his language was not intelligible until age 3. Ernesto's speech should be assessed by a speech pathologist in order to determine the need for speech therapy.

II. Physical Factors

Current vision and hearing screening indicate that vision and hearing are within the normal range. Comments from his teachers indicate that he could possibly have a hearing loss as he doesn't appear to understand what is said. Previous information indicates that his poor attention skills are not related to auditory acuity. Information from the Health History Inventories indicates that Ernesto is not at risk in the areas of Prenatal/Postnatal, Trauma, Disease and Illness, Vision, or Hearing.

Ernesto's physical education teacher reports that he has no difficulty with gross motor coordination. He participates in group activities and his performance does not indicate a need for adapted physical education.

Performance on the Bender (Koppitz) indicates a VMA or 6-0 to 6-5 as 8 errors were scored. When scoring the Bender using the Hain's system, six errors were scarable. Examples of classroom work indicate that his handwriting is relatively large with evidence of extensive erasures. A scaled score of 4 was obtained on the Coding subtest of the WISC-R. It can be concluded that Ernesto's performance is indicative of deficits in perceptual motor integration.

III. Emotional/Behavioral Factors

Ernesto was observed by the educational diagnostician in his American History class. From this observation, Ernesto appears to be unable to cope with the tasks assigned him. He is unable to sit still as he wiggles in his chair and makes frequent trips to the pencil sharpener. His greatest accomplishment during observation was finding pencil and paper and writing the name and date on the paper. He erases frequently and generally has the eraser on the paper more than the point of his pencil.

His teachers report that he does not turn in assignments and often disrupts the class in an effort to entertain them. He makes inappropriate vocalizations and asks to go to the restroom frequently in an effort to remove himself from a frustrating situation.

His father reports that Ernesto is "touchy." His teacher from last year reinforced the father's statement. He is unable to differentiate between a touch in jest or in anger and consequently wants to fight every time he is touched. His classmates have nicknamed him "Rat" because he is small in stature.

His previous teacher reports that he is subject to distraction, prone to anger, lacks self-confidence, and is unable to work independently. He requires one to one instruction in order to achieve and makes more progress when instruction is conducted orally.

IV. Sociological Factors

Information gleaned from the parents during the Parent Interview (SOMPA) indicate that Ernesto resides with his natural parents. There are six children in his family and nine persons currently reside in the home. Both parents are employed at the Levelland Vegetable Oil Mill. The father completed the third grade and is a native of Littlefield. The mother completed the sixth grade and resided in Cardwell, Texas during her childhood. The family has been active in both school and church activities at St. Regina's Catholic Church. Information from the Sociocultural Scales is as follows:

	Own Ethnic Group		School Culture	
	SS	%	SS	%
Family Size	32	11	11	1
Family Structure	59	70	59	70
Socioeconomic Status	44	35	29	9
Urban Acculturation	51	50	20	3

Ernesto attended St. Regina's Parochial School from kindergarten until this year when he transferred to the Junior High. He has been absent from school very little. Evidence indicates that educational opportunity has been adequate and should not be a factor in academic acquisition. Sociocultural factors, even though depressed in comparison to the School Culture, are not the primary cause of Ernesto's failure to achieve as scaled scores within his own ethnic group are within the normal range.

V. Intellectual Factors

WISC-R - 9-27-79

Information	1	Picture Completion	7
Similarities	2	Picture Arrangement	10
Arithmetic	4	Block Design	8
Vocabulary	3	Object Assembly	4
Comprehension	5	Coding	4
Digit Span	1		
Verbal	57	Performance	77
		Full Scale	65

Ernesto's performance on the WISC-R indicates that he is currently functioning in the borderline range of mental ability when compared to others in the general population. Scores from a previously administered WISC indicate performance within the same range. This testing also correlates with current testing as there is a significant difference between verbal and performance scores on both assessments. Evidence reported by the parents, his teachers, and examiner observation indicates that adaptive behavior is within the normal range. He has served as quartermaster in his Boy Scout troop and as manager of the basketball team. These actions indicate that his adaptive behavior is normal. It can be concluded that Ernesto is not mentally retarded since performance scores and adaptive behavior skills are less than two standard deviations from the mean.

VI. Educational Performance Level

Woodcock Johnson - 9-26-79

	GE	SS
Reading Clus.	1.2	-65
Math Clus.	1.6	-65
Written Lang. Clus.	1.3	-65

WRAT - 9-26-79

	GE	SS
Reading	2.9	63
Spelling	2.1	66
Arithmetic	2.7	63

Woodcock Reading Mastery - 9-27-79

	GE	SS
Letter Identification	3.4	-65
Word Identification	1.5	-65
Word Attack	1.4	-65
Word Comprehension	1.3	-65
Passage Comprehension	1.5	-65
Total Reading	1.5	-65

Sixty-five is the lowest possible standard score which can be computed on the Woodcock instruments, although Ernesto's actual performance on these tests indicates a much lower level of functioning.

When standard scores derived from individually administered achievement tests are compared to measured ability, achievement is not commensurate with ability in the areas of basic reading skill, reading comprehension, mathematical calculation, mathematical reasoning, written expression, and spelling. There appears to be greater than one standard deviation between measured ability and achievement test standard scores when actual performance is considered.

VII. Learning Competencies

Information from System FORE competency based testing indicates that Ernesto is functioning at Level 12 in Decoding skills which is approximately second grade level. He is able to decode short vowels, recognize and reproduce consonants and their respective sounds, and to form compound words with two known words. In Mathematics his level of academic competency is at Level 11 which is approximately second grade level. He is unable to tell time to the quarter hour or to recognize an inch, foot, or yard. He is able to differentiate shapes and colors and to read a calendar. He can differentiate between the values of coins, but he is unable to count money or make change. He appears to have limited concept of subtraction even when regrouping is not involved. He can count and recognize numbers, but he has limited mental arithmetic skills. See the System FORE profile for more detailed information.

SOUTH PLAINS EDUCATIONAL CO-OP
STATEMENT OF ELIGIBILITY

Name: Ernesto Gonzales
DOB: 8-15-66

Grade: 8
School: Junior High
Date of Report: 10-1-79

A. Ernesto's level of intellectual functioning is above the mentally retarded range as evidenced by his performance on the WISC-R.

B. When standard scores derived from individually administered achievement tests are compared to measured ability, achievement is not commensurate with ability in the areas of basic reading skill, reading comprehension, mathematical reasoning, mathematical calculation, written expression, and spelling.

C. According to data gleaned from observation, Ernesto appears to be subject to distraction, prone to anger, and is unable to work independently. He requires one to one instruction in order to make progress and learns better auditorially.

D. Vision and hearing are normal. He exhibits difficulty in auditory reception which is often mistaken for a hearing loss. Evidence suggests perceptual motor defficits. No relevant medical factors are noted.

E. Ernesto's learning problems do not appear to be primarily the result of emotional disturbance; visual, hearing, or orthopedic handicap; or ecoomic, environmental, or cultural differences. Educational opportunity has been adequate. Adaptive behavior is within the normal range.

It can be concluded that Ernesto meets current eligibility criteria for classification as learning disabled and is eligible for services in the areas of basic reading skill, reading comprehension, mathematical reasoning, mathematical calculation, written expression, and spelling.

	Agree	Disagree
R. Sebold LD Teacher	✓	
S. McSpadden Educational Diagnostician	✓	
J. Teeters Regular Teacher	✓	

Appendix A

Sample #1

Austin Independent School District

Classroom Observation Form Guidelines

Part I: OBSERVATION IN REGULAR CLASS. The purpose of this observation is to provide information about the student's behavior in a regular lesson in either a large or small group setting. On each observation, compare the student's behavior with classmates. This information will be important to an understanding of the observation. Record specific behaviors and avoid making judgments.

A. Classroom Environment. Observe and record such things as:

- type and level of noise
- lighting and temperature
- availability of space
- other stimuli to which student may attend
- seating
- instructional materials
- portable, regular or open classrooms
- pupil/teacher ratio

B. Instructional Situation and Student Behavior. Observe and record such things as:

1. Beginning of Lesson
   - seating arrangement and student's proximity to teacher
   - noise and activity level of group
   - student and group response to teacher's "ready to attend" cues
   - student interactions
2. Directions and Assignments
   - type of assignment and student response required
   - student's response to teacher's oral directions and written directions
   - student's response to teacher's visual aids or cues (e.g., diagrams, charts, pictures, overhead, gestures, facial expression, other body language)
   - student interactions
3. Student Work and/or Participation in Group Lesson
   - student organization and use of materials
   - student looks to other students for information about instructions or for answers
   - student asks teacher for clarification; other responses to teacher
   - student concentration or distraction while working (describe source of interruption and note by self or other source)
   - task completion
   - student interactions

4. Transition Time
   - student's response to teacher's directions regarding transition
   - noise and activity level of group
   - student behavior during transitions
   - student behavior in new activity
   - student interactions

Part II: OBSERVATION IN AREA OF SUSPECTED DISABILITY. The purpose of this part of the observation is to record the student's behavior in an area where his/her achievement is lagging behind learning potential. Plan to observe the student in the area(s) of specific difficulty identified during the Referral Committee Meeting.

The observation guidelines for each area contain a list of student characteristics and an optional checklist. The characteristics were chosen to direct the observer attention to relevant behaviors; they are not necessarily "symptoms" of a learning disability.

Classroom Observation Form

Name of Student ______________________ ID # ______________________

Name of Observer ______________________ Position ______________________

Date of Observation ______________________ Time of Observation: from ____ to ____

Place of observation (school, grade, type of class) ______________________

____

Part I: OBSERVATION IN REGULAR CLASS*

A. Describe environment of the classroom.

B. Describe instructional situation and student's behavior as compared to classmates. Include a running commentary of specific behaviors and avoid subjective judgments.

Part II: FOCUSED OBSERVATION IN AREA OF SUSPECTED LEARNING DIFFICULTY*
Describe the instructional situation and the student's learning and behavior as compared to classmates.

*Continue on other pages as necessary. See observation guidelines for suggestions as to how to describe the classroom situation and the student's behavior.

STUDENT LEARNING CHARACTERISTICS
CLASSROOM OBSERVATION FORM, PART II

AISD

AREA: ORAL EXPRESSION

Guidelines

The following list of student characteristics can be used by the observer to identify areas to notice and record on Part II of the observation form. Used in this manner, the list can serve as a guideline for the observer.

Checklist

The list can also be used as a checklist of student characteristics which can be used as an addition to the observations in Part II of the form. The observer, the classroom teacher and/or others can use this form.

Observer ______________________________

Date of observation ____________________

Student Name ____________________

Identification Number ____________

Does the student:

		Yes	Sometimes	No	Not Observed
1.	speak in single word statements only	___	___	___	___
2.	speak in phrases only	___	___	___	___
3.	use parts of speech incorrectly: nouns	___	___	___	___
4.	verbs	___	___	___	___
5.	adjectives	___	___	___	___
6.	prepositions	___	___	___	___
7.	pronouns	___	___	___	___
8.	plurals	___	___	___	___
9.	speak "baby talk"	___	___	___	___
10.	show differences from other students in: volume	___	___	___	___
11.	pitch and/or voice quality	___	___	___	___
12.	intonation	___	___	___	___
13.	word order	___	___	___	___
14.	vocabulary	___	___	___	___
15.	pronunciation	___	___	___	___
16.	grammar	___	___	___	___
17.	pause when speaking	___	___	___	___
18.	stutter or repeat words	___	___	___	___
19.	clench hands, roll eyes or show body tension when speaking	___	___	___	___
20.	substitute sounds for others	___	___	___	___
21.	distort some sounds	___	___	___	___
22.	omit some sounds	___	___	___	___
23.	imitate sounds correctly	___	___	___	___
24.	speak excessively	___	___	___	___
25.	speak infrequently	___	___	___	___
26.	use gestures to substitute for words	___	___	___	___
27.	relate ideas in sequence	___	___	___	___
28.	follow usual social conventions when speaking	___	___	___	___
29.	make self understood by other students	___	___	___	___
30.	contribute to class discussions with on task comments	___	___	___	___
31.	contribute to class discussions with off task comments	___	___	___	___
32.	appear to understand what he/she hears with difficulty	___	___	___	___
33.	describe personal experiences or tell short stories	___	___	___	___
34.	tell long stories	___	___	___	___

SUGGESTIONS FOR RECORD OF STUDENT'S BEHAVIOR:

Describe what the student says and how he/she says it. Note the sounds, order of words, the meaning of the student's speech and the relationship of the speech to the situation. Record examples of the difficulties noted on the checklist. Also record examples of the student's strengths in this area.

STUDENT LEARNING CHARACTERISTICS
CLASSROOM OBSERVATION FORM, PART II

AISD

AREA: LISTENING COMPREHENSION

Guidelines

The following list of student characteristics can be used by the observer to identify areas to notice and record on Part II of the observation form. Used in this manner, the list can serve as a guideline for the observer.

Observer ______________________________

Date of observation ____________________

Checklist

The list can also be used as a checklist of student characteristics which can be used as an addition to the observations in Part II of the form. The observer, the classroom teacher and/or others can use this form.

Student Name ____________________

Identification Number ___________

Does the student:	Yes	Some-times	No	Not Observed
1. respond to sounds when he/she cannot see the source				
2. ask that statements be repeated				
3. often say "what?", "huh?", etc.				
4. ignore others when they talk to him/her				
5. watch speakers lips				
6. repeat/imitate what he/she hears				
7. confuse similar-sounding words				
8. follow through with one-step directions				
9. follow through with two-step directions				
10. follow through with three or more step directions				
11. do the opposite of the teacher's instructions				
12. attend to TV programs				
13. enjoy being read to				
14. carry on conversations with other students				
15. appear to understand common vocabulary words				
16. sit still when listening to teacher				
17. sit still when listening to other students				
18. sit still when listening to tape recorder, records				
19. use earphones appropriately in listening station				
20. wait for speaker to finish before responding				
21. appear to locate the direction of sounds				
22. follow directions when playing games				
23. answer questions appropriately				
24. confuse direction words (ex: front, back)				
25. confuse time concepts (ex: before, after)				
26. ask relevant questions after hearing a story				
27. show increased difficulty in any of the above areas when classroom noise increases				

SUGGESTIONS FOR RECORD OF STUDENT'S BEHAVIOR

Describe the manner in which the student listens to and responds to the teacher and other students. Give examples of any difficulties you observe and any differences between this student and other students. Also record examples of the student's strengths in this area.

STUDENT LEARNING CHARACTERISTICS
CLASSROOM OBSERVATION FORM, PART II

AISD

AREA: WRITTEN EXPRESSION

Guidelines

The following list of student characteristics can be used by the observer to identify areas to notice and record on Part II of the observation form. Used in this manner, the list can serve as a guideline for the observer.

Checklist

The list can also be used as a checklist of student characteristics which can be used as an addition to the observations in Part II of the form. The observer, the classroom teacher and/or others can use this form.

Observer ______________________________

Date of observation ____________________

Student Name ____________________

Identification Number ____________

Does the student:	Yes	Sometimes	No	Not Observed
1. hold pencil in correct alignment to paper	___	___	___	___
2. grip pencil in tense, awkward manner	___	___	___	___
3. produce written work which is: legible	___	___	___	___
4. properly spaced	___	___	___	___
5. properly capitalized	___	___	___	___
6. properly punctuated	___	___	___	___
7. use extra effort to write	___	___	___	___
8. write from left to right	___	___	___	___
9. write from top to bottom	___	___	___	___
10. reverse letters or words	___	___	___	___
11. substitute letters or words	___	___	___	___
12. omit letters or words	___	___	___	___
13. make spelling errors on words below reading level	___	___	___	___
14. make spelling errors on words at reading level	___	___	___	___
15. change behavior when he/she is asked to write	___	___	___	___
16. express a complete thought: in a sentence	___	___	___	___
17. in a paragraph	___	___	___	___
18. in an essay	___	___	___	___
19. copy correctly: from a paper on desk	___	___	___	___
20. from the board	___	___	___	___
21. try to avoid written work	___	___	___	___
22. combine unrelated ideas in written work	___	___	___	___
23. sequence thoughts adequately in writing	___	___	___	___
24. express original or creative thoughts in writing	___	___	___	___
25. mix manuscript and cursive forms	___	___	___	___
26. attempt to proofread work	___	___	___	___
27. correct his/her own errors	___	___	___	___
28. prefer manuscript to cursive	___	___	___	___
29. prefer typing to handwriting	___	___	___	___

SUGGESTIONS FOR RECORD OF STUDENT'S BEHAVIOR

Describe the student's approach to written work. Give examples of competencies and observed difficulties. If possible, attach samples of the student's written work to this form. Describe any differences in written expression between this student and other students.

STUDENT LEARNING CHARACTERISTICS
CLASSROOM OBSERVATION FORM, PART II

AISD

AREA: BASIC READING SKILL

Guidelines

The following list of student characteristics can be used by the observer to identify areas to notice and record on Part II of the observation form. Used in this manner, the list can serve as a guideline for the observer.

Checklist

The list can also be used as a checklist of student characteristics which can be used as an addition to the observations in Part II of the form. The observer, the classroom teacher and/or others can use this form.

Observer ______________________

Student Name ______________________

Date of Observation ______________________

Identification Number ______________________

Observe the student's reading at his/her instructional level which is __________.

Does student:	Yes	Sometimes	No	Not Observed
1. avoid reading	___	___	___	___
2. change behavior when asked to read silently	___	___	___	___
3. change behavior when asked to read orally	___	___	___	___
4. name alphabet letters correctly	___	___	___	___
5. recognize own name	___	___	___	___
6. match letter	___	___	___	___
7. guess words from: initial letters	___	___	___	___
8. pictorial cues	___	___	___	___
9. context cues	___	___	___	___
10. sound out: vowels correctly	___	___	___	___
11. consonants correctly	___	___	___	___
12. words correctly	___	___	___	___
13. blend sounds correctly	___	___	___	___
14. have an adequate sight vocabulary	___	___	___	___
15. substitute: sounds	___	___	___	___
16. words	___	___	___	___
17. omit: sounds	___	___	___	___
18. words	___	___	___	___
19. repeat: sounds	___	___	___	___
20. words	___	___	___	___
21. read from left to right	___	___	___	___
22. skip lines	___	___	___	___
23. move head when reading	___	___	___	___
24. move lips when reading	___	___	___	___
25. use finger to anchor self when reading	___	___	___	___
26. read high frequency sight words correctly (the, and, but)	___	___	___	___
27. drop voice at end of sentence	___	___	___	___
28. read orally with expression	___	___	___	___
29. read word-by-word	___	___	___	___
30. read faster silently than orally	___	___	___	___
31. observe small differences between words (plurals, verb-endings, possessives) when reading	___	___	___	___
32. correct his/her own errors	___	___	___	___
33. check out library books and read them	___	___	___	___

SUGGESTIONS FOR RECORD OF STUDENT'S BEHAVIOR

Observe the student's reading at his/her instructional level. Describe the reading materials/methods. Describe how the student reads, both orally and silently, including word attach skills. Give examples of errors. Describe how the student uses his body while working (ex: moving around, pointing, covering up words.)

STUDENT LEARNING CHARACTERISTICS
CLASSROOM OBSERVATION FORM, PART II

AISD

AREA: READING COMPREHENSION

Guidelines

The following list of student characteristics can be used by the observer to identify areas to notice and record on Part II of the observation form. Used in this manner, the list can serve as a guideline for the observer.

Observer ______________________________

Date of observation ____________________

Checklist

The list can also be used as a checklist of student characteristics which can be used as an addition to the observations in Part II of the form. The observer, the classroom teacher and/or others can use this form.

Student Name ____________________

Identification Number ______________

Follow guidelines for basic reading skill first and address reading comprehension in addition to observing reading mechanics.

Does the student:	Yes	Some-times	No	Not Observed
1. read and follow directions	___	___	___	___
2. answer questions after reading	___	___	___	___
3. read and complete math story problems	___	___	___	___
4. understand main idea of a passage	___	___	___	___
5. understand subordinate ideas of a passage	___	___	___	___
6. draw conclusions from a passage	___	___	___	___
7. make inferences from a passage	___	___	___	___
8. recall sequences of written information	___	___	___	___
9. use content cues to guess at unknown words	___	___	___	___
10. read comics	___	___	___	___
11. read library books	___	___	___	___
12. read newspapers	___	___	___	___
13. volunteer information read from other sources	___	___	___	___
14. read in other content areas	___	___	___	___
15. read at a rate comparable to other students	___	___	___	___

SUGGESTIONS FOR RECORD OF STUDENT'S BEHAVIOR

Record any behaviors which describe the student's level of understanding of what he reads and any differences between comprehension of silent and oral reading. Give examples. Describe ways in which the student uses information gained from reading. For example: does the student use content cues to guess at unknown words?

STUDENT LEARNING CHARACTERISTICS
CLASSROOM OBSERVATION FORM, PART II

AISD

AREA: MATHEMATICS CALCULATION

Guidelines

The following list of student characteristics can be used by the observer to identify areas to notice and record on Part II of the observation form. Used in this manner, the list can serve as a guideline for the observer.

Checklist

The list can also be used as a checklist of student characteristics which can be used as an addition to the observations in Part II of the form. The observer, the classroom teacher and/or others can use this form.

Observer ______________________________

Student Name ____________________

Date of Observation ____________________

Identification Number ____________

Observe the student at his/her math instructional level which is ______________________________.

Does the student:	Yes	Sometimes	No	Not Observed
1. rote count to 20	___	___	___	___
2. count by tens	___	___	___	___
3. understand one-to-one correspondence	___	___	___	___
4. read numbers to 20	___	___	___	___
5. complete addition correctly with: one digit numbers	___	___	___	___
6. two or more digits	___	___	___	___
7. carrying	___	___	___	___
8. complete subtraction correctly with: one digit numbers	___	___	___	___
9. two or more digits	___	___	___	___
10. borrowing	___	___	___	___
11. complete multiplication correctly with: one digit numbers	___	___	___	___
12. two or more digits	___	___	___	___
13. complete division correctly with: one digit numbers	___	___	___	___
14. two or more digits	___	___	___	___
15. confuse operational signs	___	___	___	___
16. use fingers for computation	___	___	___	___
17. use manipulatives for computation	___	___	___	___
18. reverse numbers	___	___	___	___
19. keep columns straight	___	___	___	___
20. copy problems with adequate spacing	___	___	___	___
21. find page numbers correctly	___	___	___	___
22. use place values correctly	___	___	___	___
23. complete problems involving more than one mathematical operation	___	___	___	___
24. complete problems very slowly	___	___	___	___
25. avoid the use of math	___	___	___	___
26. change behavior when required to do math	___	___	___	___
27. complete math problems "in his head"	___	___	___	___
28. show more ability in reading than math	___	___	___	___
29. show more tension during math than other subjects	___	___	___	___
30. complete math assignments at his/her level	___	___	___	___
31. correct his/her own errors	___	___	___	___

SUGGESTIONS FOR RECORD OF STUDENT'S BEHAVIOR

Observe the student working at his/her instructional level. Give examples of observed competencies and difficulties. Observe the manner in which the student approaches math problems (behavior, organization of work, patterns of errors) as well as the skills the student has or has not mastered.

STUDENT LEARNING CHARACTERISTICS
CLASSROOM OBSERVATION FORM, PART II

AISD

AREA: MATHEMATICS REASONING

Guidelines

The following list of student characteristics can be used by the observer to identify areas to notice and record on Part II of the observation form. Used in this manner, the list can serve as a guideline for the observer.

Checklist

The list can also be used as a checklist of student characteristics which can be used as an addition to the observations in Part II of the form. The observer, the classroom teacher and/or others can use this form.

Observer ______________________

Student Name ______________________

Date of observation ______________________

Identification Number ______________

Follow guidelines for mathematics calculation first. Compare observations of mathematic reasoning with calculation skills. Observe the student at his/her math instructional level which is ____________ .

Does the student:	Yes	Sometimes	No	Not Observed
1. Apply math operations to real life problems				
2. Complete word problems				
3. Understand basic math concepts such as more/less				
4. Recognize and name basic shapes (circle, square, diamond)				
5. Experience some success with puzzle/code/card type games				
6. Understand basic time concepts (yesterday, before)				
7. Name the days of the week correctly				
8. Name months correctly				
9. Use the calendar correctly				
10. Tell time to the nearest half-hour				
11. Tell time correctly				
12. Use basic money terms correctly (penny, dime. dollar)				
13. Make change correctly				
14. Use basic measurements correctly (inches, feet)				
15. Use tables and/or graphs correctly				
16. Choose appropriate operations to complete math problems				
17. Guess at answers instead of trying to solve problems				
18. Solve problems with missing elements				
19. Differentiate between essential and nonessential information in solving problems				
20. Solve problems with a rote, inflexible approach				
21. Use manipulatives creatively to solve problems				
22. Ask for assistance from teacher instead of attempting to solve problem				
23. Ask for assistance from other students instead of attempting to solve problem				
24. Solve problems involving a sequence of steps				

SUGGESTIONS FOR RECORD OF STUDENT'S BEHAVIOR

Observe student at his/her instructional level. Complete the mathematics calculation section also. Observe and record examples of the student's problem solving skills and difficulties in approaching math problems. Describe the student's behavior in the learning situation as well as his/her math reasoning skills.

APPENDIX A SAMPLE 2

San Antonio Independent School District
Classroom Observation Form (Draft)

SCHOOL: ______________________________ OBSERVER, TITLE: ____________________

STUDENT'S NAME: ______________________ STUDENT'S ID NUMBER: ________________

GRADE: _______________________________ TEACHER: ___________________________

I. Setting: Subject ________________ Class Size ________________

Student's assigned work area ______________________________
Grade level of instruction presented ______________________
Grade level of materials presented ________________________
Teacher instructional time ________________________________
Student independent work time _____________________________
Student evaluation procedures: Written tests _____, oral tests _____, demonstrations _____, role playing _____
Student support services: tutor _____ peer tutor _____ teacher help _____ parent helpers _____

II. Student behavior:

Social adjustment to: teacher ______ peers ______ support person ______
(withdrawn, accepting, aggressive, appreciative, communication, etc.)

Response to teaching strategies used in:

one to one instruction ____
verbal instruction _______
independent work _________
pencil paper tasks _______
small groups _______
large groups _______
manipulatives ______
multimedia _________

(attention time, work time, work completion, start up time, etc.)

Work folder: Completed ______ Condition ______
Home work: Completed ______ Condition ______

Functional Level compared to peers: Please circle the appropriate number:

	Excellent	Good	Average	Poor	Very Poor
Oral Expression	1	2	3	4	5
Written Expression	1	2	3	4	5
Listening Comprehension	1	2	3	4	5
Basic Reading Skills	1	2	3	4	5
Reading Comprehension Skills	1	2	3	4	5
Mathematics Reasoning	1	2	3	4	5
Mathematics Calculation	1	2	3	4	5
Spelling	1	2	3	4	5

Other significant behavior: ______________________________________

APPENDIX B

KEYMATH DIAGNOSTIC ARITHMETIC TEST
SUPPLEMENTARY NORMS TABLES: GRADES 2-6
PERCENTILE RANKS AND NORMAL CURVE EQUIVALENTS
(JULY, 1978)

AGS AMERICAN GUIDANCE SERVICE
CIRCLE PINES, MN 55014

THESE TABLES MAY BE REPRODUCED TO MEET YOUR NEEDS.

Explanation of the Supplementary Norms Tables

On the following pages are tables for converting total test raw scores on KeyMath Diagnostic Arithmetic Test (KeyMath) to percentile ranks and Normal Curve Equivalents (NCEs). These supplementary norms were developed from nationwide testing conducted in October, 1977 and April, 1978. Test users will find these tables helpful in meeting Title I reporting guidelines. A total of 1,845 pupils were tested in the October, 1977 norming study; 1,708 pupils were tested in the April, 1978 program. A more complete report of these studies will be released within the next few months and may be obtained by writing to the publisher.

Directions for Using the Norms Tables

Follow these steps to use the norms tables:

1. Locate the appropriate table for the type of derived score conversion desired. Use Tables 1A and 1B to convert KeyMath total test raw scores to percentile ranks. Table 1A contains percentile ranks for October testing; Table 1B contains percentile ranks for April testing. Use Tables 2A and 2B to convert KeyMath total test raw scores to Normal Curve Equivalents. Table 2A contains Normal Curve Equivalents for October testing; Table 2B contains Normal Curve Equivalents for April testing. If testing did not occur during October or April, choose the table that is closer to the date of testing. For example, if testing occurred in November, Table 1A would be used to convert total test raw scores to percentile ranks; Table 2A would be used to convert total test raw scores to Normal Curve Equivalents. If testing occurred in March, Table 1B would be used to obtain percentile ranks; Table 2B would be used to obtain Normal Curve Equivalents.

2. In the table selected, locate the column corresponding to the pupil's grade at the time of testing. Find the pupil's KeyMath total raw score in that column and read the corresponding percentile rank or Normal Curve Equivalent from the outside columns of the table.

   Example 1: Percentile Rank

   A grade 3 pupil tested in October received a KeyMath total raw score of 103. According to Table 1A, a raw score of 103 has a percentile rank of 66 for grade 3 pupils tested in October. This means that 66 percent of the pupils in the national norming sample received scores of 103 or less, while 34 percent of the grade 3 pupils scored above 103.

   Example 2: Normal Curve Equivalent (NCE)

   A grade 5 pupil was given KeyMath as a pretest in October and received a total test raw score of 134. According to Table 2A, a raw score of 134 has an NCE of 41 in grade 5. This pupil was given KeyMath as a posttest in April and received a total test raw score of 155. According to Table 2B, a raw score of 155 has an NCE of 49 in grade 5. These NCEs of 41 (October) and 49 (April) could then be used for Title I reporting if the fall-to-spring pretest-posttest model were being used.

OCTOBER TESTING

TABLE 1A

KEYMATH DIAGNOSTIC ARITHMETIC TEST
PERCENTILE RANKS CORRESPONDING TO TOTAL TEST
RAW SCORES — GRADES 2 - 6
OCTOBER TESTING

GRADES 2 - 6

Percentile Rank	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Percentile Rank
99	107-209	135-209	164-209	181-209	194-209	99
98	104-106	132-134	162-163	179-180	193	98
97	102-103	130-131	161	177-178	-	97
96	100-101	127-129	160	174-176	192	96
95	99	126	158-159	173	191	95
94	97-98	125	156-157	172	-	94
93	96	123-124	154-155	171	190	93
92	95	122	153	170	188-189	92
91	94	-	152	169	187	91
90	93	121	151	168	183-186	90
89	-	120	150	167	180-182	89
88	92	-	149	166	179	88
87	91	119	148	-	178	87
86	90	118	146-147	165	177	86
85	89	-	145	164	-	85
84	87-88	117	144	163	176	84
83	-	116	143	-	-	83
82	86	113-115	141-142	162	175	82
81	-	112	-	-	-	81
80	85	-	140	161	174	80
79	-	111	139	160	-	79
78	-	110	-	-	173	78
77	84	-	138	159	-	77
76	-	109	137	158	172	76
75	83	-	-	-	-	75
74	-	108	136	157	171	74
73	-	107	135	156	-	73
72	82	-	134	-	170	72
71	-	106	-	155	-	71
70	81	105	133	154	169	70
69	-	-	-	-	-	69
68	80	104	132	153	168	68
67	-	-	-	-	-	67
66	79	103	131	152	167	66
65	-	-	-	-	166	65
64	78	102	130	151	-	64
63	-	-	-	-	165	63
62	77	101	129	-	-	62
61	-	-	-	150	164	61
60	76	100	128	-	163	60
59	-	-	127	149	-	59
58	75	99	-	148	162	58
57	-	-	126	147	-	57
56	-	98	125	-	161	56
55	74	-	-	146	-	55
54	-	97	124	145	-	54
53	-	96	-	144	160	53
52	-	-	123	-	-	52
51	73	95	122	143	-	51

Percentile Rank	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Percentile Rank
50	-	-	-	-	159	50
49	-	94	-	-	-	49
48	72	-	121	142	-	48
47	-	93	-	-	158	47
46	-	-	120	141	-	46
45	71	92	-	140	-	45
44	-	-	119	-	-	44
43	-	91	-	139	157	43
42	70	-	118	-	-	42
41	-	90	-	138	-	41
40	-	89	117	137	156	40
39	69	-	-	-	-	39
38	-	88	116	136	155	38
37	-	-	-	-	-	37
36	68	87	115	135	154	36
35	-	86	-	-	-	35
34	67	-	114	134	153	34
33	-	85	-	-	152	33
32	-	-	113	133	-	32
31	66	84	112	132	151	31
30	-	-	111	131	150	30
29	-	83	110	130	-	29
28	65	-	109	129	149	28
27	-	-	108	128	-	27
26	64	82	107	127	148	26
25	-	-	106	126	147	25
24	63	-	105	-	146	24
23	-	81	-	125	-	23
22	-	-	104	124	145	22
21	62	80	103	123	144	21
20	-	-	102	122	143	20
19	61	79	-	-	142	19
18	-	-	101	121	140-141	18
17	60	78	-	120	-	17
16	59	-	100	119	138-139	16
15	-	77	-	117-118	137	15
14	58	76	99	116	135-136	14
13	-	-	98	-	134	13
12	57	75	97	115	133	12
11	56	-	96	114	132	11
10	55	74	88-95	113	131	10
9	54	73	87	112	130	9
8	-	72	86	111	126-129	8
7	53	71	85	109-110	124-125	7
6	52	70	83-84	107-108	123	6
5	50-51	69	81-82	105-106	121-122	5
4	46-49	61-68	80	104	115-120	4
3	45	59-60	75-79	99-103	113-114	3
2	43-44	57-58	74	97-98	109-112	2
1	0-42	0-56	0-73	0-96	0-108	1

APRIL TESTING

TABLE 18

KEYMATH DIAGNOSTIC ARITHMETIC TEST
PERCENTILE RANKS CORRESPONDING TO TOTAL TEST
RAW SCORES — GRADES 2 - 6

APRIL TESTING

GRADES 2 - 6

Percentile Rank	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Percentile Rank
99	126-209	157-209	169-209	189-209	202-209	99
98	124-125	153-156	167-168	186-188	200-201	98
97	121-123	151-152	166	185	198-199	97
96	119-120	148-150	165	184	197	96
95	118	147	-	183	196	95
94	117	145-146	164	182	195	94
93	116	144	163	181	-	93
92	115	143	162	179-180	193-194	92
91	-	142	-	-	192	91
90	114	141	161	177-178	191	90
89	112-113	140	-	176	190	89
88	111	139	160	-	189	88
87	-	138	159	175	-	87
86	110	137	-	-	188	86
85	109	-	158	174	187	85
84	-	136	-	-	-	84
83	108	-	157	173	186	83
82	-	135	156	172	-	82
81	107	134	-	171	185	81
80	106	-	155	170	0	80
79	-	133	-	-	184	79
78	105	132	154	169	183	78
77	-	131	-	168	-	77
76	104	130	153	-	182	76
75	103	-	-	167	-	75
74	-	129	152	-	181	74
73	102	-	-	166	190	73
72	-	128	151	-	-	72
71	101	127	-	-	179	71
70	-	-	150	165	-	70
69	100	126	-	-	178	69
68	-	-	149	164	-	68
67	99	125	-	-	177	67
66	-	-	148	163	-	66
65	98	124	147	-	176	65
64	-	-	-	-	175	64
63	-	123	146	162	-	63
62	97	-	-	-	174	62
61	-	-	145	-	-	61
60	-	122	-	161	173	60
59	96	-	144	-	-	59
58	-	121	143	-	172	58
57	95	-	-	160	171	57
56	-	-	142	-	-	56
55	94	120	-	159	170	55
54	93	118-119	141	-	169	54
53	92	117	-	158	-	53
52	91	-	-	-	168	52
51	-	116	140	157	-	51

Percentile Rank	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Percentile Rank
50	90	-	-	156	167	50
49	-	115	139	-	-	49
48	89	-	-	155	166	48
47	-	-	138	-	-	47
46	88	114	137	154	165	46
45	87	-	-	-	-	45
44	-	-	136	153	164	44
43	86	113	-	152	-	43
42	-	-	135	-	163	42
41	85	112	-	151	-	41
40	-	-	134	-	-	40
39	84	111	-	150	162	39
38	-	-	133	-	-	38
37	-	-	-	149	161	37
36	83	110	132	-	-	36
35	-	-	131	148	160	35
34	82	109	130	147	159	34
33	81	108	-	-	-	33
32	-	107	[illegible]	146	158	32
31	80	-	128	-	157	31
30	-	106	127	145	155-156	30
29	79	105	-	-	154	29
28	-	-	126	144	153	28
27	78	104	-	-	152	27
26	-	-	125	143	-	26
25	-	103	124	142	151	25
24	77	-	-	141	150	24
23	-	102	123	140	-	23
22	76	101	-	138-139	149	22
21	-	100	122	-	148	21
20	75	-	121	137	147	20
19	-	99	120	136	-	19
18	74	98	119	135	145-146	18
17	73	97	118	134	144	17
16	-	95-96	117	132-133	143	16
15	72	92-94	-	131	142	15
14	-	91	116	129-130	141	14
13	71	90	115	128	140	13
12	70	89	109-113	127	139	12
11	69	87-88	107-108	125-126	138	11
10	-	86	106	124	134-137	10
9	68	85	-	-	131-133	9
8	67	84	105	123	130	8
7	66	-	104	-	-	7
6	64-65	82-83	103	122	129	6
5	62-63	81	-	121	128	5
4	60-61	78-80	102	120	122-127	4
3	59	74-77	101	119	120-121	3
2	57-58	69-73	94-100	117-118	114-119	2
1	0-56	0-68	0-93	0-116	0-113	1

OCTOBER TESTING

GRADES 2 - 6

TABLE 2A

KEYMATH DIAGNOSTIC ARITHMETIC TEST
NORMAL CURVE EQUIVALENTS CORRESPONDING TO TOTAL TEST RAW SCORES — GRADES 2 - 6

OCTOBER TESTING

Normal Curve Equivalent (NCE)	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Normal Curve Equivalent (NCE)
99	110-209	136-209	165-209	182-209	195-209	99
98	108-109	135	-	181	-	98
97	107	-	-	-	-	97
96	-	-	164	-	194	96
95	106	134	-	-	-	95
94	-	-	163	180	-	94
93	105	133	-	-	-	93
92	-	132	-	179	-	92
91	104	131	162	-	193	91
90	103	-	-	178	-	90
89	102	130	161	177	-	89
88	101	129	-	176	-	88
87	-	128	160	175	192	87
86	100	127	-	174	-	86
85	99	-	159	173	-	85
84	98	126	158	-	191	84
83	-	125	157	172	-	83
82	97	124	155-156	-	190	82
81	96	-	154	171	-	81
80	-	123	-	-	189	80
79	95	122	153	170	188	79
78	94	121	152	169	185-187	78
77	-	-	151	168	184	77
76	93	120	150	167	182-183	76
75	92	-	149	-	179-181	75
74	91	119	148	166	178	74
73	90	118	147	165	-	73
72	89	-	145-146	164	177	72
71	87-88	117	144	163	176	71
70	-	116	142-143	-	-	70
69	86	113-115	141	162	175	69
68	85	112	140	161	174	68
67	-	111	139	160	-	67
66	84	110	138	159	173	66
65	-	109	137	158	172	65
64	83	108	136	157	171	64
63	-	107	135	156	-	63
62	82	106	134	155	170	62
61	81	105	133	154	169	61
60	80	104	132	153	168	60
59	79	103	131	152	167	59
58	78	102	130	-	166	58
57	-	101	129	151	165	57
56	77	100	128	150	164	56
55	76	-	127	149	163	55
54	75	99	126	147-148	162	54
53	-	98	125	146	161	53
52	74	97	124	145	160	52
51	73	96	123	144	-	51

Normal Curve Equivalent (NCE)	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Normal Curve Equivalent (NCE)
50	-	94-95	122	143	159	50
49	72	-	121	142	-	49
48	-	92-93	120	141	158	48
47	71	-	119	140	-	47
46	70	91	118	139	157	46
45	-	90	117	138	156	45
44	69	88-89	116	137	155	44
43	68	87	-	136	-	43
42	-	86	115	135	153-154	42
41	67	85	114	134	152	41
40	66	-	112-113	133	151	40
39	-	84	111	131-132	150	39
38	65	83	109-110	129-130	149	38
37	-	-	108	128	148	37
36	64	82	106-107	126-127	147	36
35	63	81	105	125	146	35
34	-	-	104	124	145	34
33	62	80	103	123	143-144	33
32	61	-	102	122	142	32
31	-	79	-	121	141	31
30	60	78	101	120	140	30
29	59	-	100	119	138-139	29
28	-	77	-	117-118	136-137	28
27	58	76	99	116	135	27
26	57	-	98	115	133-134	26
25	-	75	97	-	132	25
24	56	74	96	114	131	24
23	55	-	88-95	113	-	23
22	-	73	87	112	130	22
21	54	-	86	111	129	21
20	-	72	-	-	125-128	20
19	53	71	85	110	124	19
18	-	-	-	109	-	18
17	52	70	84	107-108	123	17
16	-	-	82-83	106	122	16
15	50-51	69	-	-	121	15
14	49	68	81	105	119-120	14
13	47-48	65-67	80	104	115-118	13
12	46	61-64	-	103	114	12
11	-	-	75-79	101-102	-	11
10	45	59-60	-	99-100	-	10
9	-	-	-	-	113	9
8	44	-	74	98	-	8
7	-	57-58	-	-	112	7
6	-	-	-	97	-	6
5	43	-	-	-	109-111	5
4	-	55-56	73	94-96	-	4
3	-	-	-	-	-	3
2	41-42	-	-	93	107-108	2
1	0-40	0-54	0-72	0-92	0-106	1

APRIL TESTING

TABLE 28

KEYMATH DIAGNOSTIC ARITHMETIC TEST
NORMAL CURVE EQUIVALENTS CORRESPONDING TO TOTAL TEST
RAW SCORES — GRADES 2 - 6

APRIL TESTING

GRADES 2 - 6

Normal Curve Equivalent (NCE)	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Normal Curve Equivalent (NCE)
99	130-209	158-209	170-209	194-209	203-209	99
98	129	157	169	193	202	98
97	126-128	-	-	-	-	97
96	-	156	-	189-192	-	96
95	-	155	168	186-188	-	95
94	125	-	-	-	201	94
93	-	154	-	-	-	93
92	124	153	167	-	200	92
91	122-123	-	-	185	199	91
90	-	152	166	-	-	90
89	121	151	-	-	198	89
88	120	150	-	-	-	88
87	-	149	165	184	197	87
86	119	148	-	-	-	86
85	-	147	-	183	-	85
84	118	146	164	-	196	84
83	-	-	-	182	-	83
82	117	145	-	-	195	82
81	-	144	163	181	-	81
80	116	143	-	180	194	80
79	115	142	162	179	193	79
78	114	-	-	177-178	192	78
77	-	141	161	-	191	77
76	113	140	-	176	190	76
75	112	139	160	-	-	75
74	111	-	159	175	189	74
73	110	138	-	-	188	73
72	109	137	158	174	187	72
71	-	136	-	-	-	71
70	108	135	157	173	186	70
69	107	-	156	172	-	69
68	106	134	155	171	185	68
67	-	133	-	170	184	67
66	105	132	154	169	183	66
65	104	131	153	168	182	65
64	103	129-130	152	167	181	64
63	102	128	-	166	180	63
62	101	-	151	-	179	62
61	-	127	150	165	-	61
60	100	126	149	164	178	60
59	99	125	148	-	177	59
58	98	124	147	163	176	58
57	-	123	146	162	175	57
56	97	-	145	-	173-174	56
55	96	122	144	161	-	55
54	95	121	143	160	171-172	54
53	94	120	142	-	170	53
52	92-93	117-119	141	158-159	169	52
51	91	116	140	157	168	51

Normal Curve Equivalent (NCE)	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Normal Curve Equivalent (NCE)
50	90	-	139	156	167	50
49	89	115	138	155	166	49
48	88	114	137	154	165	48
47	87	-	136	153	164	47
46	86	113	135	152	163	46
45	85	112	134	151	-	45
44	84	111	133	150	162	44
43	83	110	132	149	161	43
42	82	109	131	148	160	42
41	81	108	130	147	159	41
40	80	107	128-129	146	157-158	40
39	-	106	127	145	155-156	39
38	79	105	126	144	153-154	38
37	78	104	125	143	152	37
36	-	103	124	142	151	36
35	77	102	-	141	150	35
34	76	101	123	139-140	149	34
33	-	100	122	137-138	148	33
32	75	99	121	136	147	32
31	74	98	119-120	135	146	31
30	73	97	118	134	144-145	30
29	-	95-96	117	132-133	143	29
28	72	92-94	116	130-131	142	28
27	71	91	115	129	140-141	27
26	-	90	113-114	128	139	26
25	70	89	109-112	127	-	25
24	69	87-88	107-108	125-126	138	24
23	-	-	106	124	134-137	23
22	68	86	-	-	131-133	22
21	67	85	-	123	-	21
20	-	84	105	-	130	20
19	66	-	-	-	-	19
18	65	82-83	104	122	-	18
17	-	-	-	-	129	17
16	64	-	103	-	-	16
15	62-63	81	-	121	128	15
14	61	-	102	-	123-127	14
13	60	78-80	-	120	122	13
12	-	-	-	-	-	12
11	59	77	101	119	120-121	11
10	-	76	-	-	-	10
9	-	74-75	-	-	-	9
8	58	71-73	100	118	-	8
7	-	-	-	-	119	7
6	-	-	98-99	-	-	6
5	-	69-70	94-97	117	-	5
4	57	-	-	-	114-118	4
3	-	-	-	-	-	3
2	-	-	93	116	111-113	2
1	0-56	0-68	0-92	0-115	0-110	1

APPENDIX C

A Resource Guide to the Stages of Individual Assessment

Introduction

The Texas State Plan for the Education of Exceptional Children describes individual assessment as "the gathering of data about an individual child in order to allow the determination of (1) the presence or absence of a handicapping condition, (2) the student's need for special education services, and (3) specific intervention strategies." This intent and observance of state and federal laws have been further articulated through the Policies and Administrative Procedures for the Education of Handicapped Students in describing three stages of individual assessment: (1) determination of physical, mental, and/or emotional conditions; (2) determination of educational performance levels, and (3) identification of specific competencies and recommended instructional and related services needed.

In planning local policies and procedures it may be necessary for appraisal professionals to designate certain tests and techniques which will assist in answering questions about a student and conform to Texas Education Agency policies and procedures. Because there are three stages of individual assessment and a variety of individual characteristics no one test or battery of tests will ever suffice for all students that are referred for individual assessment. In fact, it is unlikely that any one test will provide sufficient information for more than one stage of individual assessment. Additionally, the involvement of different professionals such as counselors, visiting teachers, classroom teachers as well as educational diagnosticians and (associate) school psychologists in the assessment process provides the advantage of gathering a number of points of view concerning an individual student.

SUGGESTED INSTRUMENTS

The first section is intended to provide a variety of suggested alternatives for each measurable element within the three stages of the individual assessment process. In all cases, the suggested questions, tests, and techniques do NOT represent the entire spectrum of choices nor do they stand as interpretation of Texas Education Agency policies and administrative procedures. The alternatives listed are simply those that were most frequently suggested by assessment personnel.

This section is organized in two ways. Each stage of individual assessment is reproduced as it has been detailed in the Policies and Administrative Procedures for the Education of Handicapped Students. Within each stage are one or more measurable areas for appraisal professionals to consider. Each area is listed separately in the first column of a three column format. The second column lists the assessment questions that are appropriate to ask in order to measure the area. The third column lists tests or techniques which will assist the appraisal professional in answering the questions. For example:

Assessment Area	Assessment Question	Example of Tests and Techniques
A. Language "...must consist of formal and/or informal assessment of language dominance and proficiency in both expressive and receptive domains"	1. What is the student's dominant language in both expressive and receptive domains?	Verbal Language Development Scale (American Guidance Service) Test of Written Language (Pro-Ed)

Stage I Assessment of Physical, Mental and/or Emotional Conditions

Purpose: "...to determine the presence or absence of a disability which may or may not be contributing to the educational need of a student. A disability is defined as a physical, mental, or emotional condition, determined by an appropriately designated professional(s), which meets the specific eligibility criteria as established by the Texas Education Agency (as noted in Policies and Administrative Procedures for the Education of Handicapped Children).

Assessment Area	Assessment Questions	Examples of Tests and Techniques
A. Language "... must consist of formal and/or informal assessment of language dominance and proficiency in both expressive and receptive domains." "...must take place before any other individual assessment may take place."	1. What is the student's dominant language in both expressive and receptive domains? if primarily English - document if other language - use test or procedure to determine dominance. 2. "Where no clear language dominance or proficiency is demonstrated, instruments must be administered in both English and the child's other language."	Verbal Language Development Scale (American Guidance Service) Test of Written Language (Pro-Ed) Test of Language Development (Pro-Ed) Utah Test of Language Development (Communication Research Associates) NOTE: Techniques are discussed in many of the professional texts; see references. For Spanish Test for Auditory Comprehension of Language (Teaching Resources) Spanish/English Language Performance Screening (S/ELPS)(CTB/McGraw-Hill) Pre-School Language Scale (Charles Merrill) Bilingual Syntax Measure (Psychological Corp.) PAL (Primary Acquisition of Languages): Oral Language Dominance Measure (El Paso Public Schools) PAL: Oral Language Proficiency Measure (El Paso Public Schools) BINL (Basic Inventory of Natural (Languages (CHECPOINT Systems) SPLIT (Schutt Primary Language Indicator (Test)(CTB/McGraw-Hill Book Co.) LAS (Language Assessment Scales) Linguametrics Group James Language Dominance Test (Teaching Resources) NOTE: Interview with a trained bilingual person to elicit a language sample.

Assessment Area	Assessment Questions	Examples of Tests and Techniques
B. Physical "...must consist of an examination of physical conditions which directly affect the student's ability to profit from the educational process."	1. What did the referral committee report about this student's physical status? A. If no abnormal conditions exist and if no requirement for a medical evaluation in specific eligibility criteria, then no further medical exam is needed. B. If abnormal conditions are noted by the referral committee or if medical exam is required by specific eligibility criteria then obtain a general medical by physician. NOTE: In many schools a health screening is done by the school nurse; this may consist of height, weight, blood pressure, health history, etc. Division of Student Services has initiated pilot programs in several school districts for health screening. For information contact Dr. Tom Bass, Texas Education 512/475-4276.	General medical examination conducted by a physician General health history inventory from parents or guardian Health History Inventory (SOMPA) (Psychological Corporation) Physical Dexterity Tasks (SOMPA) (Psychological Corporation) Bruininks-Oseretsky Test of Motor Proficiency (American Guidance Service) Movement Skills Survey (Follett Publishing Company) Bender Visual Motor Gestalt Test (American Orthopsychiatric Association) Developmental Test of Visual-Motor Integration (Follett) Detroit Tests of Learning Aptitude - Memory for Designs (Bobbs-Merrill)

Assessment Area	Assessment Questions	Examples of Tests and Techniques
C. Emotional/Behavioral "...must consist of formally and/or informally identifying those characteristics manifested in in-school and/or out-of-school behavior which may influence learning."	To what extent does this student exhibit behaviors and other characteristics expected for his/her age and peers? Are there any in-school or out-of-school factors which may be affecting his/her learning?	Interview (teachers, parents, physicians, student, etc.) Behavior Observation (Sitko, Fink & Gillespie) Behavior Checklists (Walls, Werner and Bacon) Adaptive Behavior Measures (Coulter & Morrow) Human Figure Drawing (Koppitz) Kinetic Family Drawing (Burns & Kaufman) Children's Apperception Test (Psychological Corporation) Munsterberg Incomplete Stories Test (Koppitz) Behavior Rating Profile (Pro-Ed) Pupil Rating Scale - Myklebust (Grune & Stratton, Inc.)

Assessment Area	Assessment Questions	Examples of Tests and Techniques
D. Sociological	1. To what extent is this student similar to others in sociocultural characteristics that affect learning?	Informal social histories
"...must consist of identifying the child's family and community environmental situation influencing learning and behavioral patterns."	...parent expectations?	Sociocultural Modality Scale (SOMPA) (Psychological Corporation)
	...minimum physical and psycho-needs being met?	Samples of social history forms may be obtained from the Special Education Department of your regional education service center.
	...other family characteristics or situations directly influencing student's school achievement or behavior?	

Assessment Area	Assessment Questions	Example Tests and Techniques
E. Intellectual	1. What is the best estimate of this student's ability to acquire knowledge?	Verbal and Performance or Non Verbal Ability Cognitive Abilities Test (Houghton - Mifflin)
"...must include an assessment of verbal ability and/or performance or nonverbal ability and adaptive behavior."	2. Is there any indication of mental retardation?	Kuhlmann-Anderson Intelligence Tests (Personnel Press, Inc.) Primary Mental Abilities Test (Science (Research Associates)
"The adaptive behavior of every student being considered must be assessed in some form."	...if so, must use a test from the approved list by TEA.	Short Form Test of Academic Aptitude (CTB/McGraw-Hill)
	...if not, look at group IQ measures and short form measures.	Wechsler Scales (Psychological Corp.) Stanford-Binet Intelligence Scales (Houghton-Mifflin)
	"With the exception of assessment leading to the determination of mental retardation, minimum assessment of adaptive behavior may consist of a collection of pertinent data drawn from the assessments of emotional/behavioral and sociological factors."	Leiter International Performance Scale (Western Psychological Services) McCarthy Scale of Children's Abilities (Psychological Corp.) Arthur Point Scale (Psychological Corp.) Columbia Mental Maturity Scale (Psychological Corp.) Raven Progressive Matrices (Psychological Corp.) Hiskey-Nebraska (Marshall S. Hiskey) Merrill-Palmer Scale of Mental Tests (Psychological Corp.)
		Adaptive Behavior Adaptive Behavior Inventory for Children (ABIC), (Psychological Corp.) Vineland Social Maturity Scale (American Guidance Service) AAMD Adaptive Behavior Scale (American Association on Mental Deficiency) Camelot Behavioral Checklist (Camelot Behavioral Systems) Balthazar Scales of Adaptive Behavior (Consulting Psychologist Press) Cain-Levine Social Competency Scale (Consulting Psychologist Press)

Stage II Assessment of Educational Performance Levels
Purpose: "...to enable the admission, review, and dismissal committee to determine whether or not the student has a significant educational need for special education instruction."

Assessment Area	Assessment Questions	Examples of Tests and Techniques
"...will consist of individually administered, norm-referenced measures of educational performance that are designed to assess specific areas of educational functioning." "...assessment cannot be limited to measures that establish only general levels of academic functioning (i.e., reading, mathematics, and spelling)." "If only group-administered, norm-referenced measures are available, scores from those instruments may be used provided that other data indicate that those scores are representative of the student's classroom functioning."	1. In which area(s) (either academic, developmental or behavioral) is the student experiencing difficulty? 2. What norm-referenced instrument is appropriate for this student? 3. If the norm-referenced instrument was not individually administered, what individually administered test can be used to verify the group test? 4. How significant is the student's deficit when compared to peers? document need and significance of discrepancy	Key Math Diagnostic Arithmetic Test (American Guidance Service) Woodcock Reading Mastery Tests (American Guidance Service) Doren Diagnostic Reading Test of Word Recognition Skills (American Guidance Service) Basic School Skills Inventory (Follett Publishing Company) Boehm Test of Basic Concepts (Psychological Corporation) Woodcock Johnson Psycho-Educational Battery (Teaching Resources Corporation) Gates-McKillop Reading Diagnostic Tests (Teachers College Press) Diagnostic Reading Scales-Spache (CTB/McGraw-Hill) Denver Developmental Screening Test (LADOCA Project and Publishing Foundation) CIRCUS (Educational Testing Service) Pre-Academic Learning Inventory (Educational Dimensions, Ltd.) Durrell Analysis of Reading Difficulty (Psychological Corporation) Stanford Achievement Test (Psychological Corporation)

Stage III Assessment of Learning Competencies

Purpose: "...to provide the admission, review, and dismissal committee with recommendations for specific instructional and/or learning strategies and related services that would effectively alleviate the educational need and compensate for the disability determined in stages one and two of the comprehensive assessment."

Assessment Area	Assessment Questions	Examples of Tests and Techniques
"...must include competency-based and/or criterion-referenced measures in addition to other types of assessment techniques." "...will result in a written report and will include but not be limited to the following: (a) description of competencies of the student relative to the need areas identified and (b) statements of suggested instructional and/or learning strategies or related services that could improve and maintain the student's present competencies."	What academic areas were defined as having significant needs? Does the student's teacher have criterion referenced data available about the student's performance in those areas? Is there a scope/sequence within the student's least restrictive educational environment? If yes, assess informally within that curriculum or use instruments keyed to that curriculum. If no, select instruments that will provide specific instructional and/or learning strategies.	Informal checklists a. teacher-made b. those correlated to texts or curricula c. commercially available checklists Basic Arithmetic Skills Evaluation (BASE) (Imperial International Learning Corp.) Brigance Diagnostic Inventory of Basic Skills (Curriculum Associates, Inc.) Brigance Diagnostic Inventory of Early Development (Curriculum Associates, Inc.) Stanford Diagnostic Mathematics Test (Psychological Corp.) Stanford Diagnostic Reading Test (Psychological Corp.) Social and Prevocational Information Battery (CTB/McGraw-Hill) System FORE (FOREWORKS) Behavioral Characteristics Progression Chart (VORT Corporation) Project GUIDE (Education Service Center Region IX) Spellmaster (Learnco, Incorporated)

REFERENCES

American Association on Mental Deficiency, 5201 Connecticut Avenue, N. W., Washington, D. C. 20015

American Guidance Service, Inc., Publisher's Building, Circle Pines, Minnesota 55014

American Orthopsychiatric Association, 1790 Broadway, New York, N. Y. 10019

Bobbs - Merrill Co., Inc., 4300 West 62nd Street, Indianapolis, Indiana 46268

CHECpoint Systems, 1558 North Watermann Avenue, Suite C, San Bernardino, California 92404

CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940

Camelot Behavioral Systems, P. O. Box 607, Parsons, Kansas 67357

Communication Research Associates, Inc., Box 11012, Salt Lake City, Utah 84111

Consulting Psychologist Press, Inc., 577 College Avenue, Palo Alto, California 94306

Curriculum Associates, Inc., 6 Henshaw Street, Woburn, Mass. 01801

Education Service Center Region IX, P. O. Box 4086, Wichita Falls, Texas 76309

Educational Dimensions, Ltd., P. O. Box 366, Cedar Falls, Iowa 50613

Educational Testing Service, Princeton, New Jersey 08540

El Paso Public Schools, Department of Curriculum & Staff Development, Attn: Mr. Enrique Perez, 6531 Boeing Drive, El Paso, Texas 79925

Follet Publishing Company, 1010 West Washington Blvd., Chicago, Illinois 60607

FOREWORKS, 7112 Teesdale Avenue, North Hollywood, California 91605

Grune & Stratton, Inc., 111 Fifth Avenue, New York, N. Y. 10003

Hiskey, Marshall S., 5640 Baldwin, Lincoln, Nebraska 68508

Houghton Mifflin, 6626 Oakbrook Blvd., Dallas, Texas 75235

Imperial International Learning, Corp., Box 548, Kankakee, Illinois 60901

LADOCA Project and Publishing Foundation, East 51st Avenue & Lincoln Street, Denver, Colorado 80216

Learnco Incorporated, 156 Front Street, Box L, Exeter, New Hampshire 03833

Linguametrics Group, P. O. Box 454, Corta Madera, California 94925

Charles E. Merrill Publishing Co., A Bell & Howell Company, 1300 Alum Creek Drive, Columbus, Ohio 43216

Personnel Press, Inc., 20 Nassau Street, Princetown, New Jersey 08540

Pro-Ed, 333 Perry Brooks Building, Austin, Texas 78701

Psychological Corporation, 757 Third Avenue, New York, N. Y. 10017

Science Research Associates, Inc., 259 East Erie Street, Chicago, Illinois 60611

Teachers College Press, Columbia University, 502 West 121st Street, New York, N. Y. 10027

Teaching Resources Corporation, 100 Boylston Street, Boston, Massachusetts 02116

VORT Corporation, P. O. Box 11132, Palo Alto, California 94306

Western Psychological Services, 12031 Wilshire Blvd., Los Angeles, California 90025

PROFESSIONAL RESOURCES FOR STAGE THREE ASSESSMENT

While there is nothing substantially new about the assessment of learning competencies to appraisal professionals, the designation of this type of assessment as separate from the determination of educational performance levels may represent a new emphasis. As the appraisal professional begins to expand the battery of measures which can be used to measure learning competencies, several resources may be helpful. This section includes a listing of professional books, journal articles and other references which have been helpful to others in examining the area of assessment of learning competencies.

Additional sources of information are the personnel of your regional education service center and providing assistance to them is the staff of the Special Education Information Center, Texas Education Agency (1-800-252-9668).

PROFESSIONAL BOOKS

Adkins, D. C. Test Construction: Development and Interpretation of Achievement Tests (2nd ed.) Columbus, Ohio: Charles E. Merrill Publishing Company, 1974.

The stated purpose of this book is the improvement of teacher-made tests of educational achievement. General measurement principles, specific rules for test construction, and statistical techniques that can be applied by the reader to tests in any subject are provided. Major focus is on tests in the cognitive realm.

Aiken, L. R. Psychological Testing and Assessment. Boston: Allyn and Bacon, Inc., 1976.

Designed as a college text, this book is also a comprehensive sourcebook of information and procedures for professionals concerned with testing. It includes sections on the methodology of psychological testing, affective and cognitive assessment, various classes of tests, and specific tests within those classes. Contemporary developments in testing, legal and ethical issues, and future prospects are enumerated. A glossary of psychological terms, a list of major United States publishers of tests, and an extensive bibliography comprise the final section.

Bangs, T. E. Language and Learning Disorders of the Pre-Academic Child. New York: Appleton-Century-Crofts, 1968.

This book is directed to those interested in assessment and pre-academic training of preschool children for purposes of improving language and learning skills. The author presents a plan for early identification of deficits and strengths, a pre-academic curriculum guide, a method of adapting the guide for use with handicapped children, and clinical and educational materials for the training program.

Cross, Lee and Kenneth Goin. Identifying Handicapped Children. New York: Walker and Company, 1977. ($16.35)

Written to guide educators at state and local levels who wish to develop comprehensive programs for handicapped children, this book is intended to define the scope of such a program and examine its five elements:

1. casefinding
2. screening
3. diagnosis
4. educational assessment
5. program evaluation

Part I of the text reviews program structure and Part II provides an annotated bibliography of screening, diagnosis, and assessment devices.

Della-Piana, G. Reading Diagnosis and Prescription: An Introduction. New York: Holt, Rinehart and Winston, Inc., 1968.

The central purpose of this text is to guide the prospective reading specialist and classroom teacher in the process of individual diagnosis of reading disability and the prescription for treatments. Detailed discussions of treatment methods and materials are not included although references to materials and methods are listed and detailed prescriptions illustrated.

Fox, R. Diagnosing Classroom Learning Environments. Chicago: Science Research Associates, Inc., 1966.

Focusing on one stage of the problem solving sequence that of getting reliable information about the classroom environment--this book presents and discusses some of the data gathering instruments and techniques that have proved useful. It also provides suggestions on organizing the data so that the teacher can focus his efforts to change the learning environment.

Guszak, F. J. Diagnostic Instruction in the Elementary School. New York: Harper and Row Publishers, Inc., 1972.

Diagnostic reading and the skills required of student and teacher are the focal points of this book. A systematic approach to diagnosing and meeting the individual pupil's reading skill needs is delineated, various reading skills are blocked out, and suggestions made for specific teaching strategies. Included are bibliographies for each chapter, and both blank and completed examples of reading skill checklists.

Hills, J. R. Measurement and Evaluation in the Classroom. Columbus, Ohio: Charles E. Merrill Publishing Company, 1976.

Designed for use as a textbook for a semester course on educational measurement by upper division education students, this basic text deals with aspects of five major topics:

1. test construction
2. choice, administration, and interpretation of standardized tests
3. scoring
4. use of tests to improve instruction
5. measurement of attitudes

Particular attention is given to the legal aspects of measurement and evaluation by the teacher.

Jedrysek, E. et al. Psychoeducational Evaluation of the Preschool Child. New York: Grune and Stratton, Incorporated, 1972.

This manual attempts to simplify the testing procedures developed by Else Haeussermann and to make them more explicit. Essentially psychological and educational in its orientation and interest, the manual is intended for use as a guide in evaluating the educational potential and learning style of preschool children.

Karmel, L. J. *Measurement and Evaluation in the Schools*. London: Macmillan Publishing Company, Inc., 1970.

Written primarily for teachers, this book may be used in introductory measurement courses for guidance and psychology students. The first two chapters deal with current issues, such as cultural bias in measurement and the relationship between IQ scores and innate ability. The rest of the book is concerned with the technical aspects of testing and practical application of measurement. A representative list of tests is provided showing title, grade or age range, publisher, and the issue of Mental Measurement Yearbook (MMY) in which the test is reviewed.

Klein, S. D. *Psychological Testing of Children - A Consumer's Guide*. Boston: Psy-Ed Corporation, 1975.

This booklet is the compilation of a series of ten articles published in *The Exceptional Parent* magazine in 1972 and 1973. The author explains the specific nature and value of intelligence tests, personality tests, specialized tests for "brain injury", achievement, aptitude and interest tests, and the general principles of psychological assessment.

Lerner, J. W. *Children with Learning Disabilities*: Theories, Diagnosis, and Teaching Strategies. Boston: Houghton Mifflin, 1971.

A comprehensive introduction to the field of learning disabilities is provided by this text, which discusses its historical, theoretical, medical, and practical aspects. The diagnostic process, formal and informal testing, and the relationship between evaluation and educational programming are explored. Appendices provide lists of instructional media and materials, publishers and producers, and formal tests. A glossary of terms useful for those interested in learning disabilities is also appended.

Mann, P. H. and P. Suiter. *Handbook in Diagnostic Teaching: A Learning Disabilities Approach*. Boston: Allyn and Bacon, Inc., 1974.

Focusing on the skills necessary for teaching success in reading, writing, spelling, arithmetic, and language, this handbook includes the Mann-Suiter Developmental Spelling Inventory, and the Mann-Suiter Developmental Reading Inventory. Advice on developing inventories and score sheets, reading errors to look for, and how to spot clues as to why errors occur is provided. Deficit level curriculum plans, screening materials, curriculum plans at task level, and spelling, reading, and arithmetic inventories are also included. Duplicating masters of the screening devices and inventories are separately available.

Mann, P. H. and P. Suiter. *Teachers Handbook of Diagnostic Inventories: Spelling, Reading, Handwriting, Arithmetic, A Handbook with Duplicator Masters*. Boston: Allyn and Bacon, Inc., 1974.

Mann, P. H. and P. Suiter. *Teacher's Handbook of Diagnostic Screening: Auditory, Motor, Visual, Language, A Handbook with Duplicator Masters*. Boston: Allyn and Bacon, Inc., 1974.

Otto, W., R. A. McMenemy, and R. J. Smith. *Corrective and Remedial Teaching* (2nd ed.). Boston: Houghton Mifflin Company, 1973.

Intended for teachers who will deal with learning problems in several basic skill areas in a typical school setting, this text focuses on what can be done about solving the underachievement problem. Major emphasis is placed on reading as the single most important skill, but chapters are included on the diagnosis and remediation of spelling, arithmetic, listening, handwriting, and oral and written expression. The portion of each chapter devoted to diagnosis is divided into three sections: survey level diagnosis, specific level diagnosis, and intensive level diagnosis. Tests appropriate for use at each level are described and appropriate methods and materials for corrective teaching are cited.

Popham, W. J. *Criterion-referenced Instruction*. California: Fearon Publishers, 1973.

The purpose of this book is to help teachers make decisions regarding the design and implementation of instructional sequences and to develop tangible competencies in the curricular, instructional, and evaluational areas of their responsibilities. The major portion of the book is devoted to the presentation of a criterion-referenced instructional model, followed by sample test items, practice exercises with answers, and a glossary.

Reisman, F. K. *A Guide to the Diagnostic Teaching of Arithmetic*. Columbus, Ohio: Charles E. Merrill Publishing Company, 1973.

This book explains why some children have difficulty in learning mathematical concepts and presents tools for improving mathematics instruction. The suggested strategy for teaching is diagnostic in nature and involves identifying the level of performance at which the student is operating, analyzing the concept to be taught into its parts, and arranging these parts in a sequence that is logical.

Salvia, J. and J. E. Ysseldyke. *Assessment in Special and Remedial Education*. Boston: Houghton Mifflin Co., 1978.

An introduction to psychoeducational assessment in special and remedial education, this text is intended for those whose careers require understanding and informed use of assessment data, but who have no prior knowledge of measurement and statistical concepts. It is divided into four parts. Parts 1 and 2 provide a general overview of and orientation to assessment. Part 3 provides detailed discussions of assessment of achievement, intelligence, perceptual-motor skills, sensory functioning, language, personality and adaptive behavior, and readiness. Part 4 deals with the application of assessment practices.

Strang, R. *Diagnostic Teaching of Reading*, 2nd ed. New York: McGraw Hill Book Company, 1969.

A look at approaches to and levels of diagnosis is presented by this author who views diagnosis as a basic tool for use in providing for individual differences. The reciprocal relationship between diagnosis and teaching and the importance of student self-evaluation is stressed. Classroom observation, interview, and recording techniques are discussed. Part II of the text is devoted to individual measures, such as individual reading inventories, standardized reading tests, individual intelligence tests, projective tests, and the interpretation of each in relationship to reading instruction.

Tarczan, C. *An Educator's Guide to Psychological Tests*. Springfield, Illinois: Charles C. Thomas Publisher, 1972.

This book is designed to serve as a compact reference guide for the classroom teacher and to help that teacher become more aware of how to interpret psychological test data. The author highlights the significant features of all types of psychological tests and relates them to daily classroom remedial techniques. A chapter on the description and interpretation of psychometric terminology is particularly useful.

Wallace, G. and J. M. Kauffman. *Teaching Children with Learning Problems* (2nd ed.). Columbus, Ohio: Charles E. Merrill Publishing Co., 1978.

Presenting a practical approach to remediation of learning difficulties, Part I of this book discusses the dimensions of learning problems and principles of behavior management and academic remediation. Part II deals with teaching competencies with application across curriculum areas, including formal and informal testing, observation techniques, task analysis, goal setting, and record keeping. Suggested techniques and activities are also provided.

Wallace, G. and S. Larsen. Educational Assessment of Learning Problems: Testing for Teaching. Boston: Allyn and Bacon, Inc., 1978.

Detailing the basic theoretical, philosophical, and political issues affecting assessment, this comprehensive and readable reference analyzes hundreds of standardized tests and provides directions for designing and administering a variety of informal, teacher-made tests. Individual chapters focus on assessment tests and techniques for reading, written and spoken language, spelling, arithmetic, career education, and ecological and early childhood development. Sample case histories are included.

Weinberg, R. and F. Wood (eds.). Observation of Pupils and Teachers in Mainstream and Special Education Settings: Alternative Strategies. Reston, Virginia: Council for Exceptional Children, 1975.

Formal, systematized methods of observation designed to provide precise tools for viewing and recording pupils' behaviors in learning situations are discussed by the contributing authors. Four different systems of observation are described: interaction/analysis, ecological, ethological, and behaviorist.

Wilson, R. Diagnostic and Remedial Reading for Classroom and Clinic, (2nd ed.). Columbus, Ohio: Charles E. Merrill Publishing Co., 1972.

An introduction to the diagnostic teaching of reading, this text provides a thorough overview of diagnosis on three levels: on-the-spot, classroom, and clinical. Separate chapters discuss the two latter, with another devoted to noneducational diagnosis. The emphasis throughout is on continuous diagnosis in order that a shift in instructional strategies and materials can be effected, and the role of the teacher in the process is delineated. Appendices provide a list of tests cited in the text and arranged in chart form to indicate type, age range, administration time, and skills evaluated. A similar chart of instructional materials and a list of publishers also appears.

JOURNAL ARTICLES/CHAPTERS

Adler, S. Data Gathering: The Reliability and Validity of Test Data from Culturally Different Children. Journal of Learning Disabilities, 1973, 6(7), 429-434.

The object of this essay is to explore those factors that may influence the reliability and validity of data relevant to various cognitive and language skills of culturally different children. The author feels that present testing strategies are often "lacking in scientific rigor insofar as cross-cultural interactions are concerned." He recommends that educational and habilitative programming which has its roots in these test data be re-examined.

Bartel, H. Assessing and Remediating Problems in Language Development. In D. D. Hammill and N. Bartel (eds.), Teaching Children with Language and Behavior Problems, Boston: Allyn and Bacon, Inc., 1975.

This chapter deals with the comprehension and production of oral language. Primary consideration is given to 1) the nature of language; 2) the acquisition of normal language; 3) deviations in language development; 4) formal and informal assessment of language functioning; 5) approaches to instruction and remediation in language; and 6) specific suggestions for facilitating development of certain language skills.

Bateman, B. An Educator's View of a Diagnostic Approach to Learning Disorders. In Jerome Hellmuth, Learning Disorders, Volume I. Seattle, Washington: Special Child Publications, 1965.

The concept that diagnosis is primarily for the purpose of planning an intervention program for a given child is set forth in this article. A five-stage diagnostic-remendial process model is discussed and a list of suggested diagnostic instruments provided. The author concludes that the "primary focus should be on teaching the child to do what he cannot presently do, and that whatever techniques assist in eliciting and strengthening these behaviors should be used."

Block, J. H. Criterion-Referenced Measurements: Potential. In H. F. Clarizio, R. C. Craig, and W. A. Mehrens (eds.), Contemporary Issues in Educational Psychology. Boston: Allyn and Bacon, Inc., 1977.

Responding to Ebel's paper on the limitations of criterion-referenced measurements, Block refutes his arguments one by one, suggesting methods by which each might be overcome. He concludes that criterion-referenced measures can supplement the failure of norm-referenced measurements to provide sufficient information on what the student has not learned.

Camp, B. W. Psychometric Tests and Learning in Severely Disabled Readers. Journal of Learning Disabilities, 1973, 6(8), 512-517.

This study examines the relationship between performance on tests of auditory and visual perception and learning rate in reading lessons. Sixty nine severely dyslexic children were tested with the WRAT, the Bender-Gastalt, the Raven, a test of auditory-visual integration, and a test of visual-spatial perception. Learning rates were determined for 42 children. Significant correlations were found among the psychometric tests but not between psychometric tests and learning rate.... It was concluded that perceptual deficiencies may be more frequent in disabled readers, but learning rate and achievement are not related to the degree of perceptual deficiency.

Coulter, W. A. and H. W. Morrow. What is Psychological Assessment? Texas Psychologist, 1978, 30(1), 14-17.

This article discusses issues facing practitioners responsible for assessing children today and explains the two major purposes of psychological assessment. A clear distinction is made between identification/placement and intervention/programming, and the different kinds of tests required for each.

Cruickshank, W. M. The Psychoeducational Match. In W. M. Cruickshank and D. P. Hallahan (eds.), Perceptual and Learning Disabilities in Children, Vol. I. Syracuse: Syracuse University Press, 1975.

Concerned with an examination of the characteristics of learning and perceptual handicaps, mechanisms for assessing them, and appropriate educational responses to assessment findings, this chapter gives many examples to illustrate the matching of instructional tasks to diagnostic information.

Drew, C. J. Criterion-Referenced and Norm-Referenced Assessment of Minority Group Children. Journal of School Psychology, 1973, 11(4), 323-329.

Problems have been experienced with psychological assessment of minority children. Traditional norm-referenced measurement has received criticism for cultural bias, and the typical response has been to create new tests aimed at culture-fair assessment. Criterion-referenced measurement does not necessarily avoid the problems evidenced by norm-referenced tests, and the author calls for an examination of issues such as who determines criteria and what those criteria include.

DuBose, R., M. B. Langley, and V. Stagg. Assessing Severely Handicapped Children. *Focus on Exceptional Children*, 1977, 9(7), 1-13.

The authors advocate a dynamic process-oriented model that begins with problem identification, provides the means for including all relevant persons and data, and can be used to explore in depth the parameters of the behaviors of the person and the milieu in which he lives. The model presented provides specific plans and the procedures for implementing those plans, and culminates in follow-through to assure that targeted objectives are being accomplished. A list of selected assessment instruments for use with severely handicapped is included with a brief description of each.

Duffey, J. B. and M. L. Fedner. Educational Diagnosis with Instructional Use. *Exceptional Children*, 1978, 44(4), 246-251.

Students with learning problems have failed to profit from education partly because of the emphasis on norm-referenced testing as a diagnostic tool. It is the author's contention that a different approach is needed, and criterion-referenced assessment is suggested.

Ebel, R. L. Criterion-Referenced Measurements: Limitations. In H. F. Clarizio, R. C. Craig, and W. A. Mehrens (eds.), *Contemporary Issues in Educational Psychology*. Boston: Allyn and Bacon, Inc., 1977.

The author points out three major limitations in criterion-referenced measures and points out that this kind of measurement is not new, that norm-referenced testing also has its place in student evaluation, and that use of criterion-referenced measures "cannot be expected to improve significantly our evaluation of educational achievements."

Escovar, P. L. Another Chance for Learning - The Assessment Class. *Teaching Exceptional Children*, 1976, 9(1), 2-3.

The article discusses the assessment class, a class in a university setting designed as a short term (10-20 week) diagnostic assessment and teaching program serving local school personnel. It is intended for any child between ages 5-10, whose case raises questions about validity of prior testing, possible emotional involvements or relative effectiveness of past teaching strategies. This concept offers a short term, intensive investigation of the whole child and allows the child to demonstrate learning strengths, as well as weaknesses, over time.

Ewing, N. and R. Brecht. Diagnostic/Prescriptive Instruction: A Reconsideration of some Issues. *Journal of Special Education*, 1977, 11(3), 323-327.

A basic philosophical controversy exists regarding two fundamentally different models of diagnostic/prescriptive instruction--task analysis and ability training. The authors point out that research efforts have not conclusively demonstrated the efficacy of either model and thus, instructional programs designed to improve academic skill development should be viewed cautiously and monitored with care.

Farr, R. and Virginia Brown. Evaluation and Decision Making. Reading Teacher, 1971, 24(4), 341-346.

The purpose of this article is to acquaint the practitioner with some of the implications of the use of evaluation as an aid to decision making. Only basic concepts are introduced and the authors recommend that the article be used as the impetus for further study.

Gickling, Edward and David L. Armstrong. Levels of Instructional Difficulty as Related to On-Task Behavior, Task Completion, and Comprehension. Journal of Learning Disabilities, 11(9), November 1978, pp. 32-39.

Concerned with helping children caught in the waiting process between the identification of their problem and the receipt of some form of instructional relief, this article examines task completion, task comprehension, and on-task behavior of children functioning at the frustrational level. Results of the study indicated that by manipulating assignments to correspond to a specified criterion level (frustrational, instructional, or independent) behavior change became very predictable when measured by the three task behaviors enumerated above. The criteria used for an instructional level produced the most optimal teaching/learning situation.

Goodstein, H. A. Assessment and Programming in Mathematics for the Handicapped. Focus on Exceptional Children, 1975, 7(7), 1-11.

The article attempts to provide a philosophic base to the discussion of mathematics assessment and programming for the handicapped. Issues in the development of instructional objectives and criterion-referenced assessment are reviewed. A brief survey of current diagnostic tests and the norm-referenced approach to assessment is presented and critically reviewed. Examples of a criterion-referenced assessment and an alternate assessment approach are discussed. The author stresses that it must be the classroom teacher who makes the ultimate educational decisions.

Gronlund, N. E. Measurement and Evaluation in Teaching (2nd ed.). New York: Macmillan Publishing Co., Inc., 1971.

Designed to introduce teachers to the principles and procedures of evaluation essential to good teaching, the main theme of the book is that evaluation is an integral part of the teaching-learning process. Statistical concepts are introduced only when essential for understanding discussion.

Hammill, D. D. Evaluating Children for Instructional Purposes. Academic Therapy, 1971, 6(4), 341-353.

The article discusses the total evaluation process as including both formal and informal assessment, and stresses that instruction and evaluation are inseparable meshed. Limitations of both types of testing are pointed out and a model for an optimal evaluation procedure for use in the public schools is described.

Hammill, D. D. Problems in Writing. In D. D. Hammill and N. Bartel (eds.), *Teaching Children with Learning and Behavior Problems*. Boston: Allyn and Bacon, Inc., 1975.

The author discusses the assessment of difficulties in writing and offers selected procedures for teaching writing readiness, penmanship, and conceptual writing. The problem of adapting instruction for left-handed students is addressed.

Harmer, William R. and Fern Williams. The Wide Range Achievement Test and the Peabody Individual Achievement Test: A Comparative Study. *Journal of Learning Disabilities*, 11(10), 1978, 65-68.

Intended to provide a statistical and descriptive comparison of the WRAT and the PIAT based on the scores obtained by a sample given both tests. Discussion focuses on test factors that may account for score differences on the math subtests as a means of helping clinicians determine which of the two tests is appropriate in a given situation. The authors conclude that the two tests cannot be considered as providing the same information about the students' arithmetic abilities and discuss various considerations to be taken into account when administering the tests.

Hofmeister, A. Integrating Criterion-referenced Testing and Instruction. In W. Hively and M. Reynolds (eds.), *Domain-referenced Testing in Special Education*. Minneapolis, Minnesota: Leadership Training Institute/Special Education, University of Minnesota, 1975, pp. 77-88.

The purpose of this paper is "to suggest that the adoption of criterion-referenced testing is likely to increase the ability of an instructional system to individualize goals, monitor progress, and provide a base for instruction improvement." The author states that criterion-referenced testing cannot achieve its potential as an agent of change unless it is accompanied by a program of teacher training in programming and management skills to complement the data provided by the criterion-referenced testing.

Hutchinson, J. Reading Tests and Nonstandard Language. *Reading Teacher*, 1972, 25(5), 430-437.

The author discusses the use of the Metropolitan Achievement Test to evaluate reading performance of black urban children and concludes that it is not an appropriate instrument for this purpose. Dialect-prejudiced items are identified and some distinctive linguistic features of the Negro dialect are enumerated.

Jenkins, J. R. and D. Pany. Standardized Achievement Tests: How Useful for Special Education? Exceptional Children, 1978, 44(6), 448-453.

The extent and direction of curriculum bias in standardized reading achievement tests are examined. Bias was estimated by comparing the relative overlap in the contents of four separate reading achievement tests with the contents of five commercial reading series at first and second grade levels. Results indicate clear discrepancies. The implications of the apparent curriculum bias of achievement tests are discussed as they relate to evaluation of teachers, children, and curricula; to reading placement; and to the identification and classification of exceptional children.

Johnson, M. and R. A. Kress. Task analysis for criterion-referenced tests. Reading Teacher, 1971, 24(4), 355-359.

The authors identify two types of tasks in reading that can be presented in criterion referenced tests, discuss task definition, and provide a brief example of task analysis. They conclude that these tests appear to offer promise for the guidance of instruction when they are constructed in such a way as to be relevant to the learning opportunities provided for the child.

Keogh, B. K. and L. D. Becker. Early Detection of Learning Problems: Questions, Cautions, and Guidelines. Exceptional Children, 1973, 40(1), 5-11.

This article deals with some of the problems in early identification of children with learning problems: the validity of the predictive measures, the implications of diagnostic data for educational intervention, and the possibility that the child singled out through such identification might suffer negative consequences as a result. Ethical issues relating to programs of early identification are considered and guidelines for their implementation proposed.

LaPray, M. The Graded Word List: Quick Gauge of Reading Ability. Journal of Reading, 1969, 12, 305-307.

A discussion of the San Diego Quick Assessment as a means to determine a reading level and to detect errors in word analysis, this article describes administration of the test and briefly analyzes its results.

Larsen, S. C. The Influence of Teacher Expectations on the School Performance of Handicapped Children. Focus on Exceptional Children, 1975, 6(8), 1-14.

This article discusses the nature of teacher expectations and how they may act as precursors to self-fulfilling prophecies. The early research which promoted widespread interest in this phenomena is reviewed, with implications for understanding certain aspects of school failure.

Livingston, S. A. Criterion-referenced Applications of Classical Test Theory. *Journal of Educational Measurement*, 1972, 9(1), 13-26.

This very technical paper is concerned with the development of a reliability coefficient for criterion-referenced tests from the assumptions of classical test theory. This coefficient is based on deviations of scores from the criterion score, rather than the mean. Norm-referenced measurement is considered as a special case of criterion-referenced measurement. The article also contains a discussion of several different definitions of criterion-referenced testing.

Mavrogenes, N. A., E. F. Hanson, and C. K. Winkley. A Guide to Tests of Factors That Inhibit Learning to Read. *Reading Teacher*, 1976, 29(4), 343-358.

Consisting of a list of 65 tests of sensory-motor or perceptual-motor development in chart form, this article provides information concerning test, publisher, purpose, level, time required for administration, publication date, type of test, and who should administer it. A brief evaluation of each is also included. Tests selected for this guide cover grades K - 6 and are generally tests of physical factors affecting mental development.

MacTurk, Robert H. and John T. Neisworth. Norm-Referenced and Criterion Based Measures with Preschoolers. *Exceptional Children*, 45(1), 1978, 34-39.

The article reports on a study conducted "to compare the differential utility of norm-referenced and criterion measures as they relate to the various decisions that must be made in programs." Two measures, the *Gesell Developmental Schedules* and the criterion measure from the *HICOMP Curriculum*, were used to assess the performance of the handicapped and nonhandicapped children in an integrated preschool program. Measures were administered on a quarterly basis. Results indicated high correlation between the measures for the handicapped group, but not for the non-handicapped. The author concludes:

1. the two measures yield similar information for handicapped children
2. the classroom activities showed differential effects for each sample
3. mainstreaming does not have any apparent adverse effects on the normal children in the sample.

McCormack, J. E. The Assessment Tool that Meets Your Needs: The One You Construct. *Teaching Exceptional Children*, 1976, 8(3), 106-109.

Steps leading to construction of an informal assessment tool to provide the teacher with information on individual student's level of functioning in various skill areas are described. These include determining objectives, analyzing tasks, constructing classroom objectives matrix, developing items, listing assessment procedures, designing data sheet.

Moran, M. R. Nine Steps to the Diagnostic Prescriptive Process in the Classroom. Focus on Exceptional Children, 1975, 6(9), 1-14.

The article emphasizes teacher development of instructional prescriptions, with evaluation and remediation centered in the child's own classroom. Nine steps are enumerated: evaluate prior data, conduct informal classroom assessment of skills, set priorities for remediation, state behavioral objectives, select methods and materials, develop a time-line for the program, implement the prescription, evaluate the prescription, and modify the prescription. A discussion of each step is provided.

Moran, M. R. The Teacher's Role in Referral for Testing and Interpretation of Reports. Focus on Exceptional Children, 1976, 8(6), 1-15.

The focus of this discussion is upon decisions about referral and interpretation by the classroom teacher of testing conducted by other professionals. Part I deals with three levels of assessment, offering suggestions for appropriate referral at each level, followed by guidelines for formulating useful referral questions and for preparing a student for referral. Part II outlines three types of statements to be found in reports and offers suggestions for evaluating each type. A brief concluding section explores the attitudes to be cultivated by the teacher who would benefit from the referral process.

Pikulski, J. J. Assessing Information About Intelligence and Reading. Reading Teacher, 1975, 29(2), 157-163.

The major purpose of this paper is to review some of the questions teachers need to ask in order to assess professionally the implications for reading instruction contained in the results of an IQ test. The author suggests that teachers to familiar with the content of assessment instruments to be able to make adequate use of information regarding scores. If IQ scores are useful only to justify a low level of performance rather than to suggest remediation procedures, he feels there is little point in administering them.

Pikulski, J. J. A Critical Review: Informal Reading Inventories. Reading Teacher, 1974, 28(2), 141-151.

A thorough examination of the informal reading inventory (IRI), this article views classroom use of inventories based on instructional materials as highly desirable, but points out some pitfalls that should be guarded against and suggests the need for more study to make the IRI even more useful.

Prescott, G. A. A Criterion-Referenced Test Interpretation in Reading. The Reading Teacher, 1971, 24(4), 347-354.

The purpose of this article is to point out what the author believes to be the uses and limitations of test score interpretation in criterion-referenced testing (CRT). He sees CRT as providing useful information in guidance of pupil learning and the evaluation of instruction, but does not feel it should supercede norm-referenced testing.

Proger, B. and L. Mann. Criterion-referenced Measurement: The World of Gray Versus Black and White. *Journal of Learning Disabilities*, 1973, 6(2), 72-84.

This paper discusses three existing criterion-referenced measurement systems (CRM), provides guidelines for building one's own CRM systems, and summarizes the advantages and difficulties of CRM for children with learning disabilities. A very useful bibliography accompanies the paper.

Smead, V. S. Ability Training and Task Analysis in Diagnostic/Prescriptive Teaching. *Journal of Special Education*, 1977, 11(1), 113-125.

This article argues that neither the task analysis nor the ability training model adequately covers all the elements involved in diagnostic/prescriptive teaching. Instead, both models, used in combination, are required for complete coverage. In addition each model needs revision and extension before its potential utility is realized.

Smith, R. M. and J. T. Neisworth. Fundamentals of Informal Educational Assessment. In R. M. Smith (ed.), *Teacher Diagnosis of Educational Difficulties*. Columbus, Ohio: Charles E. Merrill Publishing Co., 1969.

This chapter deals with the general nature, problems, and educational relevance of informal specific educational assessment. Functions and dimensions of testing and assessment and their basic differences are delineated. Observing and recording behavior, collecting behavioral data, and using data from informal measures are addressed.

Spencer, E. T. and R. M. Smith. Arithmetic Skills. In R. M. Smith (ed.), *Teacher Diagnosis of Educational Difficulties*, Columbus, Ohio: Charles E. Merrill Publishing Co., 1969.

The author believes that instructional strategies for remedial procedures in arithmetic should emerge from information collected through the teacher's diagnostic efforts. Techniques for diagnosing basic arithmetic weaknesses are enumerated and some formal, informal, and teacher-made tests are described.

Valmont, W. J. Creating Questions for Informal Reading Inventories. *Reading Teacher*, 1972, 25(6), 509-512.

Suggestions for creating questions for an informal reading inventory are provided by the author in the following areas of comprehension: main ideas, details, drawing conclusions, inferences, sequencing, cause and effect, and vocabulary. Guidelines are offered to avoid common pitfalls in test construction.

Werry, J. S. and H. C. Quay. Observing the Classroom Behavior of Elementary School Children. Exceptional Children, 1969, 35(6), 461-467.

In this study of 10 normal children and a group of children with conduct or acting out disorders, evidence has been presented to suggest that a method of direct behavioral observation in the classroom is reliable, can discriminate between normal and emotionally disturbed children, yields meaningful information on the nature of a child's maladjustment to school when it is of the conduct problem type, offers data on the efficacy of a special class program, serves as a sensitive dependent variable measure of various acute therapeutic manipulations, and is comprised largely of independent items. The relevance of this measure to children with problems other than the conduct problem type has not been established.

Ysseldyke, J. E. and J. Salvia. Diagnostic-Prescriptive Teaching: Two Models. Exceptional Children, 1974, 41(3), 181-185.

Four critical assumptions underlying diagnostic-prescriptive teaching are identified. The extent to which each assumption is met within the ability training model and the task analysis model is examined. The authors concludes that the task analysis model meets the assumptions and that the ability training model does not.

APPENDIX D

Steps in Determining A Significant Discrepancy Between Subtests (Significant Scatter)

Introduction

Traditionally, tests of intellectual functioning were analyzed for patterns of significantly different scores or scatter. It has been theorized that discrepancies between potential and actual performance depicted uneven development of learning capabilities or learning disabilities (Bateman, 1965). Although the professional literature and practical procedures have suggested various methods for determining and analyzing scatter for placement and programming decisions, little attention was devoted to seriously determining what constituted significant scatter. The application of any set number of points (e.g. 5 scale score points difference) for any multifactored test is frought with psychometric flaws and inaccuracies (Salvia & Ysseldyke, 1978). Additionally, no significant evidence was ever published to validate the effectiveness of any procedure for analyzing scatter.

Recently, Salvia and Ysseldyke (1977)[1] detailed a rigorous procedure for determining what is in fact significant scatter. This sequence of steps has been developed for the WISC-R (Wechsler Intelligence Scale for Children - Revised) as an example. To develop similar procedures for other tests the appraisal professional should consult Chapter 20 in Salvia and Ysseldyke (1978).

Step 1. In order to determine if profile differences are reliable, four calculations are needed:

(a) calculate the reliability of the difference between the two subtests (rdif).

(b) calculate the Standard Deviation of the Difference between the two subtests (Sdif).

(c) calculate the Standard Error of Measurement of the Difference between the two subtests (SEM dif).

(d) establish a 95 percent confidence interval by dividing the obtained difference by the SEM of the Difference. If the quotient exceeds 1.96, the difference falls outside the interval and thus there is a real difference.

Step 2. Select two subtests for comparison. Calculate (a) the reliability of the difference between the two subtests (r dif.).

Formula - $r_{dif} = \frac{\frac{1}{2}(r_{11} + r_{22}) - r_{12}}{1 - r_{12}}$

r11 = reliability subtest

r22 = reliability subtest y

r12 = correlation between x and y

- You will need to use the correlation (r) among the subtests and
- the estimated reliability of the subtests that are presented in various tables by age group in the WISC-R manual.

Step 3. Calculate (b) the Standard Deviation of the Difference between the two subtests (S dif).

Formula = S dif = $\sqrt{S_1^2 + S_2^2 - 2r_{12}S_1S_2}$

$S_1 = S_2 = 3$

r_{12}= correlation between x and y

- the standard deviation of each scaled score is 3 on the WISC-R thus the variance (standard deviation squared) is 9.
- you will again need the correlation between the two subtests.

Step 4. Calculate (c) the Standard Error of Measurement of the Difference between the two subtests (SEM dif).

Formula = SEM dif - Sdif $\sqrt{1\text{-}rdif}$

- you will need to substitute the calculated values for the Standard Deviation of the Difference (Sdif) and
- the reliability of the difference (rdif).

Step 5. Is the difference significant at the 95 percent confidence interval?

- divide the obtained difference (subtest scaled Score A - Subtest Scaled Score B) by the Standard Error of Measurement of the difference (SEM dif).
- If it exceeds 1.96, the difference falls outside the 95 percent confidence interval and thus constitutes a statistical real difference.

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[1] Salvia, John and James Ysseldyke *Assessment in Special and Remedial Education*. Boston: Houghton Mifflin, c1977

APPENDIX E

Resources for Statistical Methods

Although this is not a comprehensive list, these references will provide basic information about statistical concepts.

Adkins, Dorothy C. *Test Construction: Development and Interpretation of Achievement Tests* (2nd ed.) Columbus, Ohio: Charles E. Merrill Publishing Company, 1974.

The stated purpose of this book is the improvement of teacher-made tests of educational achievement. General measurement principles, specific rules for test construction, the statistical techniques that can be applied by the reader to tests in any subject are provided. Major focus is on tests in the cognitive realm.

Aiken, L. R. *Psychological Testing and Assessment* (2nd ed.) Boston: Allyn and Bacon, Inc., 1976.

Part I - The Methodology of Psychological Testing is concerned primarily with the statistical aspects of testing at a very basic level. Topics include test construction, administration, scoring, item analysis, standardization, reliability, validity, and statistical methods. Definitions of terms, explanation of procedures, and methods of calculation are provided, as well as exercises at the end of each of the three chapters comprising Part I. The remainder of the book provides an analysis of individual tests or classes of tests in both cognitive and affective areas. A very useful glossary of terms is presented in Appendix A.

Anastasi, Anne. *Psychological Testing* (4th ed.). New York: Macmillan Publishing Company, Inc., 1976.

The primary goal of this text is to contribute to the proper evaluation of psychological tests and the correct interpretation and use of test results. The five chapters which make up Part II of the fourth edition are concerned with a thorough discussion of the principles of psychological testing and include the following topics:

norms and the interpretation of test scores
reliability
validity: basic concepts
validity: measurement and interpretation
item analysis

Gearheart, Bill R. and Ernest P. Willenberg. *Application of Pupil Assessment Information: for the Special Education Teacher*. Denver: Love Publishing Company. 1974.

The intent of this book is to describe the types, purposes, and appropriateness of various testing and evaluation tools and techniques; to discuss certain educational and psychological terms in common use in our schools; and to delve into the role which the classroom teacher must plan in total educational planning for children with unusual educational needs. A specific model for analysis and interpretation of assessment information is presented. Chapter One consists of an overview of terms and concepts necessary to describe and discuss various testing tools.

Gronlund, Norman E. *Measurement and Evaluation in Teaching* (3rd Ed). New York: Macmillan Publishing Company. 1976.

Two chapters in this book are of particular interest to those educational practitioners who must administer, score, and interpret tests. Chapter 11 deals with assembling, administering, and appraising classroom tests, and Chapter 15 addresses the interpretation of test scores and norms. In addition, all of Part V concerns the use of evaluation results in teaching, and an appendix on elementary statistics defines terms and formulas needed in educational measurement.

Guilford, J. P. *Fundamental Statistics in Psychology and Education*, (4th Ed.). New York: McGraw-Hill Book Company. 1965.

This basic text provides a thorough overview of the principles of statistics for students in the fields of psychology and education. Nineteen chapters deal with such topics as measure of central value, probability and mathematical distribution, hypothesis testing, chi square, prediction and accuracy of prediction, and test scales and norms. Exercises and the answers to them follow each of the chapters. Appendices provide the tables necessary for the calculation of answers to the exercises.

Hills, John R. *Measurement and Evaluation in the Classroom*. Columbus, Ohio: Charles E. Merrill Publishing Company, 1976.

Designed for use as a text by upper division education students, this book is especially appropriate for prospective teachers and teachers with little background in educational psychology. In keeping with the author's thesis that teachers need not be statisticians, each topic dealing with the statistical aspects of evaluation is introduced. Topics are then presented at the simplest level consistent with the needs of the classroom teacher. Available for use with the text is a workbook entitled, Exercises in Classroom Measurement, a series of cassette audiotapes, and Instructor's Guide, and a list of useful additional references.

Karmel. L. J. and M. O. Karmel. (2nd Ed.)
New York: Macmillan Publishing Company, Inc. 1978.

Like the first edition, this reference is directed to students of guidance, counseling, and psychology as well as to the classroom teacher. Its emphasis is on essential concepts needed in actual testing situations. Part II: Testing the Test is concerned with statistics, norms, standard scores, validity, and reliability. Concise definitions and clear explanations of basic statistical techniques are provided.

Marascuilo, Leonard A. Statistical Methods for Behavioral Science Research. New York: McGraw-Hill Book Company. 1971.

This book presents the basic philosophy and theory of modern-day statistics for students and researchers in the behavioral sciences. Set theory, the theory of probability, combinatorial analysis, discrete probability distributions, statistical theory of estimation, chi-square and distributions, and hypothesis testing are among the topics covered in this very comprehensive text. The author stresses that the reader need not be a mathematician in order to profit from the book.

Miller, D. M. Interpreting Test Scores. New York: John Wiley and Sons. 1972.

This self-study manual is intended to provide the reader with the basic statistical concepts and does not assume prior knowledge of concepts other than basic arithmetic. The concepts of mean, standard deviation, normal distribution, correlation coefficient, and standard error are explained and chapter tests provide a means of checking comprehension. To meet the needs of a wide variety of readers, the chapters have been arranged so that they can be read independently of one another, and more experienced readers may skip some chapters altogether.

Salvia, J. and Ysseldyke, J. E. Assessment in Special and Remedial Education. Boston: Houghton Mifflin Co., 1978.

An introduction to psychoeducational assessment in special and remedial education, this text is intended for those whose careers require understanding and informed use of assessment data, but who have no prior knowledge of measurement and statistical concepts. Part II, consisting of five chapters, is of particular value to those who need basic technical information to understand and interpret tests adequately. Topics include descriptive statistics, quantification of test performance, reliability, validity, and norms.

Tarczan, Constance. An Educator's Guide to Psychological Tests. Springfield, Illinois: Charles C. Thomas Publisher, 1972.

This book is designed to serve as a compact reference guide for the classroom teacher and to help that teacher become more aware of how to interpret psychological test data. The author highlights the significant features of all types of psychological tests and relates them to daily classroom remedial techniques. A chapter on the description and interpretation of psychometric terminology is particularly useful.

Vodola, Thomas M. Descriptive Statistics Made Easy for the Classroom Teacher. Bloomfield, N.J.: C.F. Wood Company, Inc., 1974.

This booklet is designed to explain a method by which anyone who possesses knowledge of elementary school mathematics can convert raw data so that it is conducive to the performance of the following tasks:

1. The development of percentile norms
2. The development of stanine scores
3. The individualization of instruction
4. Grading on an individualized basis
5. Grouping students on the basis of ability

A step-by-step approach has been used, and figures and tables have been added to make the concepts as concrete as possible.

Young, Robert K. and Donald Veldman. Introductory Statistics for the Behavioral Sciences. (2nd Ed.). New York: Holt, Rinehart and Winston. 1972.

Statistics
Measurement
Programmed
Self Pacing
Self Checking

A combination of text and programmed exercises, this book is designed for use as an introductory, self-paced course in statistics. In addition to the answers which follow each question frame there is a discussion of each question and response at the end of the book, and eight appendices which provide various tables needed for calculations.

APPENDIX F

PERCENTILES

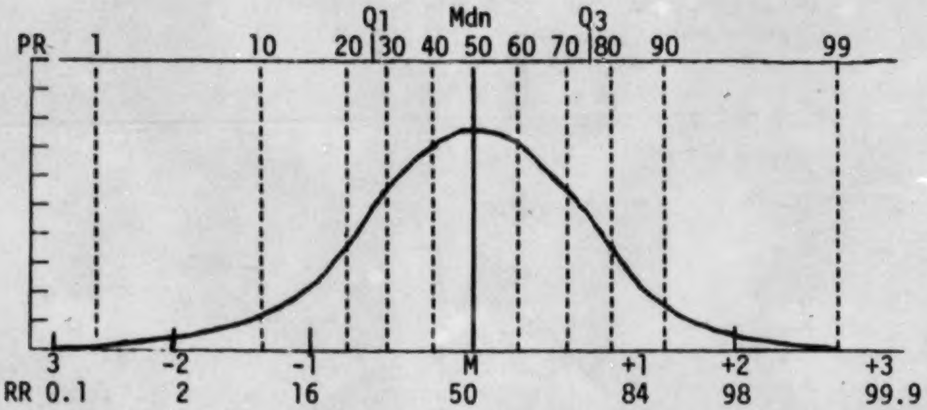

Fig. 4. Percentile Ranks in a Normal Distribution.

Percentile scores are expressed in terms of the percentage of persons in the standardization sample who fall below a given raw score. A percentile indicates the individual's relative position in the standardization sample.

Percentiles should not be confused with the familiar percentage scores. The latter are raw scores, expressed in terms of the percentage of correct items; percentiles are derived scores, expressed in terms of percentage of persons.

Percentile scores have several advantages; they are:

a. easy to compute
b. readily understood by untrained persons
c. universally applicable
d. used equally well with adults and children
e. suitable for any type of test

The chief drawback of percentile scores arises from the marked inequality of their units, especially at the extremes of the distribution. This distortion of distances between scores can be seen in Figure 4.

It is apparent that percentiles show each individual's relative position in the normative sample but not the amount of difference between scores.

Taken from: Anastasi, Anne. Psychological Testing, 4th edition, New York: Macmillan Publishing Company, Incorporated, 1976

APPENDIX G

Relationships Among Different Types of Test Scores in a Normal Distribution

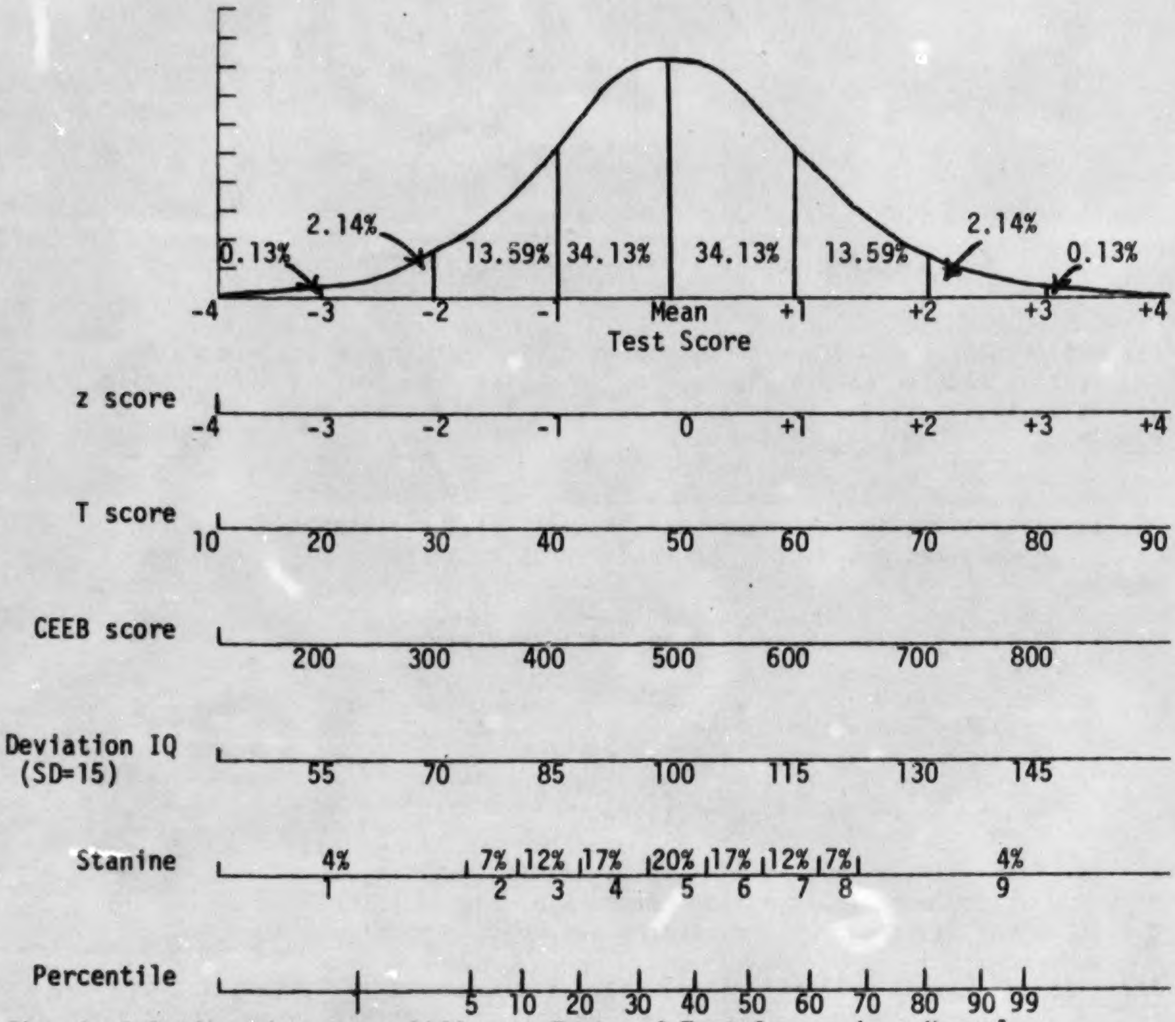

Fig. 6. Relationships among Different Types of Test Scores in a Normal Distribution.

From: Anastasi, Anne. Psychological Testing, 4th edition, New York: Macmillan Publishing Company, Incorporated, 1976.